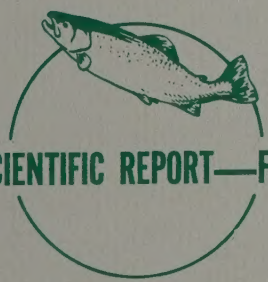
Oceanographic and Biological Data, Hawaiian Waters, January-July 1961

LIBRARY
BUREAU OF COMMERCIAL FISHERIES
U. S. FISH AND WILDLIFE SERVICE
P. O. BOX 3830
HONOLULU 12, HAWAII



SPECIAL SCIENTIFIC REPORT—FISHERIES No 436

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

Created in 1849, the Department of the Interior--America's Department of Natural Resources--is concerned with the management, conservation, and development of the Nation's water, wildlife, mineral, forest, and park and recreational resources. It also has major responsibilities for Indian and Territorial affairs.

As the Nation's principal conservation agency, the Department works to assure that non-renewable resources are developed and used wisely, that park and recreational resources are conserved for the future, and that renewable resources make their full contribution to the progress, prosperity, and security of the United States--now and in the future.

UNITED STATES DEPARTMENT OF THE INTERIOR, STEWART L. UDALL, SECRETARY
Fish and Wildlife Service, Clarence F. Pautzke, Commissioner
Bureau of Commercial Fisheries, Donald L. McKernan, Director

OCEANOGRAPHIC AND BIOLOGICAL DATA, HAWAIIAN WATERS, JANUARY - JULY 1961

By

Kenneth Sherman, Fishery Biologist
and
Robert P. Brown, Oceanographer
Bureau of Commercial Fisheries Biological Laboratory
Honolulu, Hawaii

United States Fish and Wildlife Service
Special Scientific Report: Fisheries No. 436

Washington, D. C.

July 1962

ABSTRACT

This report contains the biological and oceanographic data collected on three cruises in the central North Pacific of the U.S. Bureau of Commercial Fisheries research vessel Charles H. Gilbert in 1961. The collection of data was designed to determine the distribution of surface water types and associated biota, particularly skipjack tuna, Katsuwonus pelamis (Linnaeus). The area investigated was between longitudes 150° W. and 170° W. and latitudes 15° N. and 24° N. The data presented comprise records of observations at bathythermograph lowerings, meteorological observations, zooplankton station positions, and weights of samples (g./1,000 m.^{3}), records of sightings of fish schools, bird flocks, and aquatic mammals, surface trolling catch records, and skipjack tagging records.

CONTENTS

	Page
Introduction	1
Field party personnel	3
Field procedures	3
Bathythermograph and meteorological observations	3
Zooplankton collections	3
Surface fish school, bird flock, and aquatic mammal sightings	3
Surface trolling	3
Tagging	3
Laboratory procedures	4
Salinity determinations	4
Zooplankton	4
Literature cited	4

ILLUSTRATIONS

Figure 1	Vessel track for Charles H. Gilbert cruise 51	1
Figure 2	Vessel track for Charles H. Gilbert cruise 52	2
Figure 3	Vessel track for Charles H. Gilbert cruise 53	2

TABLES

Page

1. Record of observations at bathythermograph lowerings, Charles H. Gilbert cruise 51 . . 5
2. Record of observations at bathythermograph lowerings, Charles H. Gilbert cruise 52 . . 11
3. Record of observations at bathythermograph lowerings, Charles H. Gilbert cruise 53 . . 14
4. Record of weather observations (USWB 1210-F and 615-5), Charles H. Gilbert cruise 51 . 20
5. Record of weather observations (USWB 615-5), Charles H. Gilbert cruise 52 25
6. Record of weather observations (USWB 615-5), Charles H. Gilbert cruise 53 28
7. Zooplankton station positions and sample weights, Charles H. Gilbert cruise 51 32
8. Zooplankton station positions and sample weights, Charles H. Gilbert cruise 52 32
9. Zooplankton station positions and sample weights, Charles H. Gilbert cruise 53 33
10. Record of surface fish school, bird flock, and aquatic mammal sightings, Charles H. Gilbert cruise 51 35
11. Record of surface fish school, bird flock, and aquatic mammal sightings, Charles H. Gilbert cruise 52 37
12. Record of surface fish school, bird flock, and aquatic mammal sightings, Charles H. Gilbert cruise 53 39
13. Record of surface trolling catch data for three survey cruises in Hawaiian waters in 1961 40
14. Common and scientific names of fishes reported 41
15. Record of skipjack tagging 41

OCEANOGRAPHIC AND BIOLOGICAL DATA, HAWAIIAN WATERS, JANUARY - JULY 1961

By

Kenneth Sherman, Fishery Biologist
and
Robert P. Brown, Oceanographer
Bureau of Commercial Fisheries Biological Laboratory
Honolulu, Hawaii

INTRODUCTION

This is our second report presenting oceanographic and biological data collected on cruises in the central Pacific area between latitudes 15° N. and 26° N., longitudes 145° W. and 170° W. by research vessels of the Bureau of Commercial Fisheries Biological Laboratory, Honolulu, Hawaii. The first report (Sherman and Brown, 1961) includes the tabulation of data collected on five cruises made during January-October 1959.

The three oceanographic surveys made in the period January-July 1961 were the final ones in a program undertaken by the Biological Laboratory, Honolulu, designed to: (1) delineate the boundaries between the North Pacific Central Water Type, the zone of intermediate salinity, and the North Pacific Equatorial Water Type; and (2) monitor the seasonal movements of those boundaries and of the associated marine biota, particularly the skipjack tuna, Katsuwonus pelamis (Linnaeus). Cruise periods and vessel tracks are shown in figures 1, 2, and 3.

The present report contains a record of observed physical and biological data from the three 1961 cruises. These are presented without analysis.

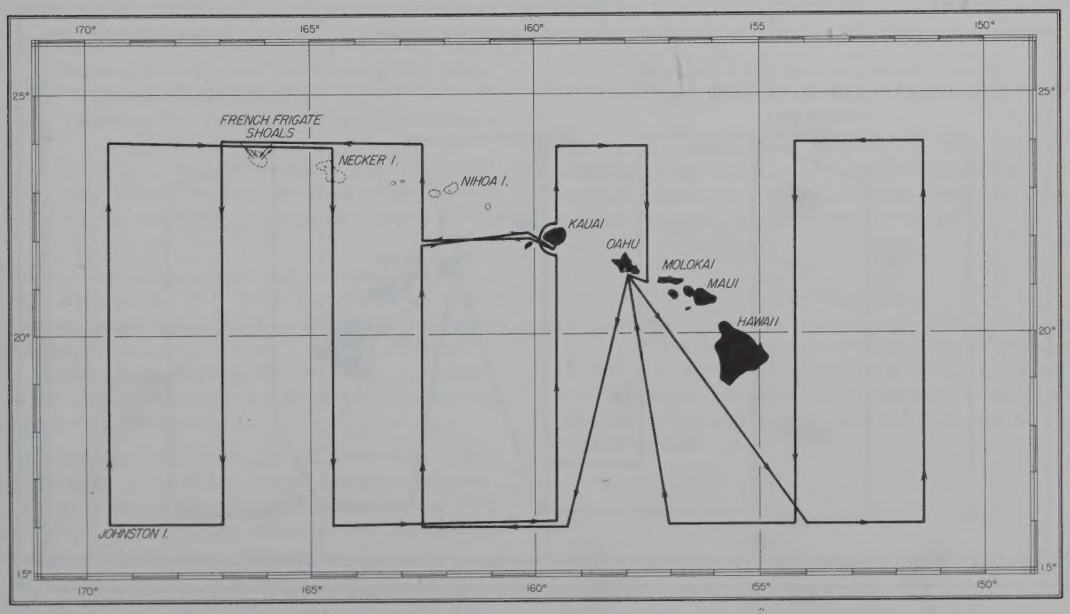


Figure 1.--Vessel track for Charles H. Gilbert cruise 51, January 16 to February 28, 1961.

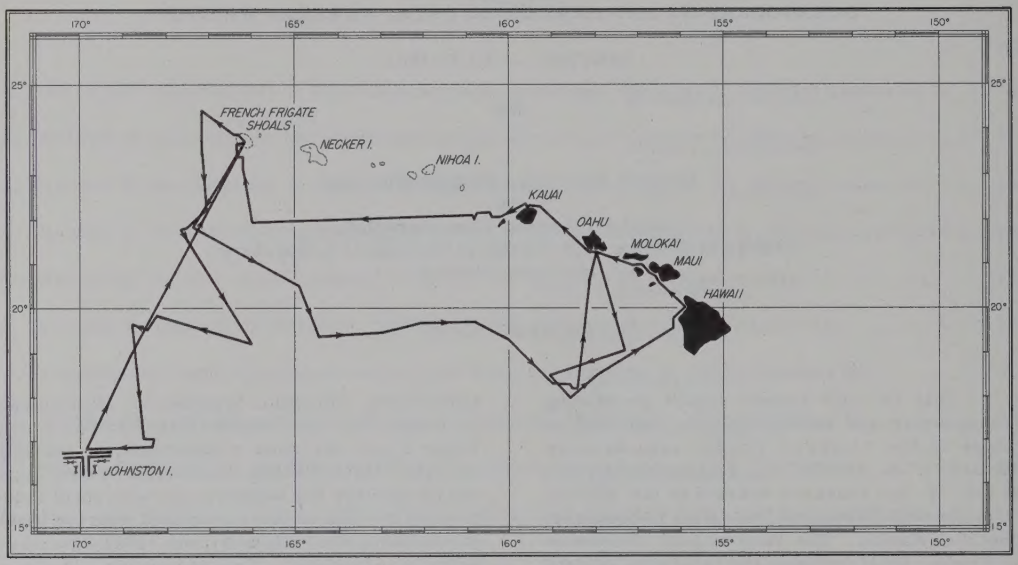


Figure 2. --Vessel track for Charles H. Gilbert cruise 52, March 27 to May 17, 1961.

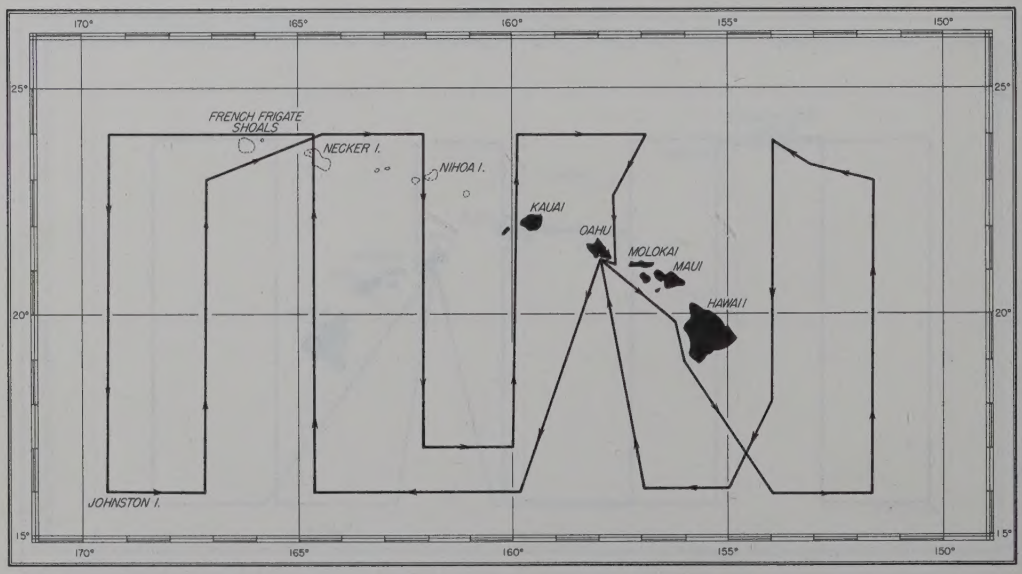


Figure 3. --Vessel track for Charles H. Gilbert cruise 53, June 20 to July 30, 1961.

An analysis of the 1959 data is contained in a report by Brown and Sherman (MS)[1]. A report concerning the results of both the 1959 and 1961 cruises is now in preparation (Brown and Sherman (MS))[2].

FIELD PARTY PERSONNEL

Charles H. Gilbert - William T. Tanaka, Master

Cruise 51

- Kenneth D. Waldron - Field Party Chief
- Robert P. Brown - Oceanographer
- Robert A. Morris - Fishery Research Biologist

Cruise 52

- Kenneth D. Waldron - Field Party Chief (March 27 to May 8)
- Kenneth Sherman - Fishery Biologist (March 27 to May 2)
- Gary H. Miller - Fishery Aid (May 3-8)
- Richard S. Shomura - Field Party Chief (May 9-17)[3]
- Eugene L. Nakamura - Fishery Biologist (May 12-17)
- Richard A. Barkley - Oceanographer (May 12-13)
- Herbert J. Mann - Fishery Methods and Equipment Specialist (May 12-17)
- Robert P. Brown - Oceanographer (May 17)
- Thomas Y. Toyama - Physical Science Technician (May 17)

Cruise 53

- Robert P. Brown - Oceanographer, Field Party Chief
- Thomas Y. Toyama - Physical Science Technician
- Gary H. Miller - Fishery Aid
- Roy Goss - Hawaii Science Club Student
- David Godfrey - Student (June 20 to July 3)

1/ Brown, R. P., and K. Sherman (MS). Oceanographic observations and skipjack distribution in the north central Pacific. Paper No. V-11, Pacific Tuna Biology Conference, Honolulu. Bureau of Commercial Fisheries Biological Laboratory, Honolulu.

2/ Brown, R. P., and K. Sherman (MS). Distribution of surface water types, skipjack, and other biota in the central Pacific during 1959 and 1961. Bureau of Commercial Fisheries Biological Laboratory, Honolulu.

3/ From May 9 to 17 field trials of experimental gill nets for capturing skipjack were conducted.

FIELD PROCEDURES

Bathythermograph and Meteorological Observations

Bathythermograph (BT) lowerings were made and a surface salinity sample was collected every 3 hours during the three cruises. The observations of weather and sea at each BT lowering appear in tables 1-3. The BT slides, prior to deposition in the U.S. Navy Hydrographic Office, were processed at the laboratory by the method described by Callaway (1957).

Weather observations were recorded at 0000, 0600, 1200, and 1800 GCT daily. These data are presented in tables 4 to 6 (U.S. Weather Bureau Forms 1210-F and 615-5). Recording and coding follow the "Manual of Marine Meteorological Observations" (U.S. Weather Bureau, 1959).

Zooplankton Collections

Ninety-nine plankton hauls were made. Of these, 49 were 1/2-hour, 0-60 m. oblique hauls and 50 were 1/2-hour surface tows.

All plankton hauls were made using a 1-m. net (King and Demond, 1953) with a body of No. 656 Nitex, aperture width 0.66 mm., and with a cod end of No. 308 Nitex, aperture width 0.31 mm. Positions, times of collection, and zooplankton weights are given in tables 7 to 9.

Surface Fish School, Bird Flock, and Aquatic Mammal Sightings

A watch was maintained for surface fish schools, birds, and aquatic mammals during the daylight hours. Summaries of these observations are presented in tables 10 to 12.

Surface Trolling

Two lines were trolled during daylight hours. A summary of surface trolling results for the three cruises is presented in table 13. Common and scientific names of fish caught are listed in table 14.

Tagging

A total of 241 skipjack were tagged with the all-plastic dart-type tags described by Yamashita and Waldron (1958). A summary of skipjack tagging results is presented in table 15.

LABORATORY PROCEDURES

Salinity Determinations

The surface salinity samples obtained at each bathythermograph lowering were analyzed on shipboard using a modification of the Knudsen method (Van Landingham, 1957). A comparison of the shipboard and subsequent laboratory determinations showed no significant difference between the two. The salinity data are included in tables 1 to 3.

Zooplankton

For all cruises, the methods of determining zooplankton abundance described by King and Hida (1957) and Sherman and Brown (1961) were followed.

LITERATURE CITED

CALLAWAY, RICHARD J.
1957. Oceanographic and meteorological observations in the northeast and central North Pacific, July-December 1956. U.S. Fish and Wildlife Service, Special Scientific Report--Fisheries No. 230, 49 p.

KING, JOSEPH E., and JOAN DEMOND
1953. Zooplankton abundance in the central Pacific. U.S. Fish and Wildlife Service, Fishery Bulletin, vol. 54, no. 82, p. 111-144.

KING, JOSEPH E., and THOMAS S. HIDA
1957. Zooplankton abundance in the central Pacific, Part II. U.S. Fish and Wildlife Service, Fishery Bulletin, vol. 57, no. 118, p. 365-395.

SHERMAN, KENNETH, and ROBERT P. BROWN
1961. Oceanographic and biological data, Hawaiian waters, January - October 1959. U.S. Fish and Wildlife Service. Special Scientific Report--Fisheries No. 396, 71 p.

U.S. NAVY HYDROGRAPHIC OFFICE
1956. Bathythermograph observations. U.S. Navy Hydrographic Office Pub. 606-C, 2nd edition. 16 p.

U.S. WEATHER BUREAU
1959. Manual of marine meteorological observations. U.S. Weather Bureau Circular M, 10th ed., 127 p.

VAN LANDINGHAM, JOHN W.
1957. A modification of the Knudsen method for salinity determination. Journal du Conseil Permanent International pour l'Exploration de la Mer, vol. 22, no. 2, p. 174-179.

YAMASHITA, DANIEL T., and KENNETH D. WALDRON
1958. An all-plastic dart-type fish tag. California Fish and Game, vol. 44, no. 4, p. 311-317.

Table 1.--Record of observations at bathythermograph lowerings, Charles H. Gilbert cruise 51
(Recorded on Laboratory BT and environment log. Coding of data follows U.S. Navy Hydrographic Office, 1956.)

Date, 1961	Time (LT)	Latitude N.	Longitude W.	BT slide no.	Thermocline depth (m.)	Bkt. surface temp. (°C.)	Surface salinity (°/oo)	10-meter temp. (°C.)	Wind		Barometer (mb.)	Weather	Sea	Visibility	Air temp.		Cloud		Secchi depth (m.)	Forel color
									Direction (°T.)	Speed (kn.)					Dry bulb (°C.)	Wet bulb (°C.)	Type	Amount		
1/18	1105	21°10'	157°48'	001	003	24.5	34.91	24.7	16	08	08	00	2	7	21.4	19.3	8	2	29	2
1/18	1400	20°50'	157°40'	002	031	25.1	34.62	25.0	20	12	06	03	2	7	25.0	21.3	8	3	X[1/]	X
1/18	1700	20°24'	157°30'	003	012	24.9	34.93	24.9	23	14	08	00	2	7	24.6	21.4	8	3	X	X
1/18	2000	20°05'	157°10'	004	001	24.8	34.80	24.9	23	14	09	00	2	7	24.9	21.3	X	X	X	X
1/18	2300	19°42'	156°47'	005	037	25.0	34.49	25.1	23	14	10	00	2	7	24.5	21.3	X	X	X	X
1/19	0200	19°21'	156°31'	006	049	24.7	34.72	24.9	26	10	09	00	2	7	24.3	21.6	X	X	X	X
1/19	0500	19°02'	156°17'	007	009	24.8	34.41	24.9	29	10	09	00	2	7	24.4	21.4	X	X	X	X
1/19	0800	18°40'	155°58'	008	032	24.8	34.41	24.8	27	13	10	03	2	7	24.6	22.0	8	7	X	X
1/19	1100	18°19'	155°40'	009	073	24.8	34.35	25.0	26	15	10	03	2	7	25.0	22.4	8	4	32	2
1/19	1400	18°02'	155°24'	010	008	24.7	34.41	24.8	27	17	09	03	2	7	26.1	23.0	8	7	X	X
1/19	1700	17°39'	155°05'	011	046	24.6	34.17	24.4	27	15	10	00	2	7	26.2	23.3	8	7	X	X
1/19	2000	17°18'	154°48'	012	036	24.6	34.15	24.1	26	13	10	00	2	7	24.7	22.9	X	X	X	X
1/19	2300	16°56'	154°31'	013	095	24.6	34.15	25.0	24	12	11	00	2	7	24.7	22.8	X	X	X	X
1/20	0200	16°34'	154°14'	014	029	24.6	34.21	24.7	25	11	12	00	2	7	24.0	22.6	X	X	X	X
1/20	0500	16°17'	154°01'	015	024	24.6	34.07	24.6	21	06	12	00	2	7	23.3	21.7	X	X	X	X
1/20	0800	15°56'	153°43'	016	038	24.7	34.12	24.9	18	08	14	00	2	7	23.3	21.7	8	9	X	X
1/20	1100	15°56'	153°14'	017	038	25.3	34.04	25.0	16	09	14	01	2	7	25.4	22.3	4	2	31	2
1/20	1400	15°58'	152°51'	018	002	25.6	34.08	25.1	17	05	11	01	1	8	24.4	21.8	4	2	X	X
1/20	1700	16°03'	152°25'	019	001	25.8	34.09	25.1	09	01	08	03	1	8	25.1	21.7	4	6	X	X
1/20	2000	16°08'	151°59'	020	052	25.2	34.12	25.0	04	08	13	00	2	7	24.9	21.8	X	X	X	X
1/20	2300	16°09'	151°53'	021	012	25.1	34.15	25.1	07	09	13	00	2	7	25.0	22.1	X	X	X	X
1/21	0200	16°18'	151°33'	022	063	24.9	34.10	25.0	15	11	16	02	2	7	24.3	21.8	X	X	X	X
1/21	0500	16°40'	151°35'	023	032	25.0	34.11	24.9	05	04	13	00	2	7	25.1	21.3	X	X	X	X
1/21	0800	17°09'	151°39'	024	070	24.3	34.39	24.4	12	10	14	03	2	8	25.7	22.5	4	4	X	X
1/21	1100	17°37'	151°40'	025	073	24.6	34.44	24.4	13	07	15	01	4	8	25.8	22.4	8	2	37	2
1/21	1400	18°00'	151°41'	026	003	25.0	34.26	24.3	07	07	12	03	2	8	24.3	21.4	8	6	X	X
1/21	1700	18°26'	151°43'	027	002	24.9	34.39	24.2	07	07	13	03	2	8	25.2	21.8	8	6	X	X
1/21	2000	18°50'	151°43'	028	002	24.2	34.48	24.1	05	12	14	00	2	7	23.9	21.1	X	X	X	X
1/21	2230	18°58'	151°43'	029	001	24.1	34.51	24.2	06	10	14	00	2	7	23.6	20.6	X	X	X	X
1/22	0200	19°31'	151°45'	030	012	24.5	34.73	24.4	09	11	13	00	2	7	23.1	20.2	X	X	X	X
1/22	0500	19°53'	151°46'	031	021	23.9	34.81	23.8	09	07	13	00	2	7	23.3	20.1	X	X	X	X
1/22	0800	20°21'	151°45'	032	047	24.0	34.92	23.4	12	05	15	03	2	7	24.1	20.4	8	4	X	X
1/22	1100	20°51'	151°36'	033	001	23.8	34.94	23.4	18	04	15	01	3	8	26.2	20.8	8	2	37	2
1/22	1400	21°14'	151°33'	034	001	24.7	34.79	24.4	19	06	12	01	2	8	23.3	19.9	8	1	X	X
1/22	1700	21°39'	151°28'	035	002	24.0	34.88	23.8	05	09	12	01	2	8	23.5	20.1	8	3	X	X
1/22	2000	22°05'	151°23'	036	004	23.3	34.93	23.3	22	13	14	00	2	7	23.8	20.7	X	X	X	X
1/22	2235	22°10'	151°21'	037	006	23.0	34.99	23.2	24	14	14	00	3	7	23.5	20.7	X	X	X	X
1/23	0200	22°41'	151°15'	038	054	23.0	35.00	23.1	24	14	11	00	3	7	22.8	20.6	X	X	X	X
1/23	0500	23°04'	151°10'	039	048	23.1	34.96	23.3	15	17	12	00	3	7	23.4	21.1	X	X	X	X
1/23	0800	23°32'	151°07'	040	049	23.2	34.93	23.2	24	19	12	63	3	4	23.2	21.3	5	7	X	X

1/ X indicates that no observation was recorded.

Table 1.--Record of observations at bathythermograph lowerings, Charles H. Gilbert cruise 51 (con.)

Date, 1961	Time (LT)	Latitude N.	Longitude W.	BT slide no.	Thermocline depth (m.)	Bkt. surface temp. (°C.)	Surface salinity (°/oo)	10-meter temp. (°C.)	Wind		Barometer (mb.)	Weather	Sea	Visibility	Air temp.		Cloud		Secchi depth (m.)	Forel color
									Direction (°T.)	Speed (kn.)					Dry bulb (°C.)	Wet bulb (°C.)	Type	Amount		
1/23	1100	23°47'	151°19'	041	002	23.1	34.94	23.3	32	19	14	21	3	6	22.9	18.5	8	7	X	X
1/23	1400	23°47'	151°40'	042	073	23.0	35.06	23.0	32	19	12	01	3	7	21.4	16.6	8	4	X	X
1/23	1700	23°47'	152°03'	043	063	23.1	34.99	23.2	32	19	13	00	4	8	21.1	15.6	8	2	X	X
1/23	2000	23°47'	152°26'	044	002	23.0	35.06	23.1	33	25	16	00	4	8	21.9	17.3	8	4	X	X
1/23	2300	23°52'	152°49'	045	060	23.0	35.06	23.1	35	15	16	00	4	8	20.8	15.6	8	2	X	X
1/24	0200	23°55'	153°13'	046	037	22.2	35.21	22.2	01	14	16	00	4	8	18.6	14.0	X	X	X	X
1/24	0500	23°58'	153°36'	047	027	22.1	35.25	22.2	07	26	17	00	4	8	19.4	14.7	X	X	X	X
1/24	0800	24°02'	153°59'	048	031	22.2	35.22	22.2	01	10	18	03	3	8	18.9	14.6	5	6	X	X
1/24	1100	23°50'	154°11'	049	009	22.0	35.26	21.9	09	14	18	02	3	8	20.8	15.6	4	6	29	2
1/24	1400	23°28'	154°11'	050	050	23.6	34.88	23.6	10	14	14	03	3	8	20.2	16.3	8	6	X	X
1/24	1700	23°02'	154°11'	051	091	23.7	34.83	23.7	13	13	15	02	3	8	21.3	17.1	8	7	X	X
1/24	2000	22°36'	154°11'	052	063	23.7	34.83	23.7	13	19	16	00	3	7	22.3	18.4	X	X	X	X
1/24	2300	22°10'	154°12'	053	005	23.7	34.85	23.7	14	19	16	00	4	8	22.8	19.2	8	6	X	X
1/25	0200	21°44'	154°12'	054	042	23.8	34.89	23.8	15	23	15	01	4	8	23.1	19.1	8	3	X	X
1/25	0500	21°18'	154°12'	055	042	23.8	34.84	23.8	09	24	14	00	4	8	23.8	20.2	X	X	X	X
1/25	0800	20°52'	154°12'	056	038	24.0	34.87	23.9	14	18	15	00	4	8	25.2	21.7	8	6	X	X
1/25	1100	20°26'	154°12'	057	055	23.9	34.81	23.8	17	15	15	03	3	8	24.9	22.5	6	7	29	2
1/25	1400	20°04'	154°12'	058	042	24.2	34.78	24.1	19	16	12	25	3	7	24.4	21.9	8	9	X	X
1/25	1700	19°18'	154°10'	059	067	24.5	34.59	24.4	18	13	12	03	3	7	24.6	21.9	8	7	X	X
1/25	2000	19°11'	154°09'	060	091	24.6	34.51	24.6	18	14	13	00	3	7	24.7	22.3	8	8	X	X
1/25	2300	18°44'	154°08'	061	067	24.6	34.60	24.4	18	14	14	00	3	7	24.5	22.2	8	3	X	X
1/26	0200	18°17'	154°06'	062	012	24.6	34.51	24.6	22	13	13	01	3	7	24.4	22.4	8	5	X	X
1/26	0500	17°58'	154°06'	063	073	24.5	34.40	24.6	19	11	12	01	3	7	24.4	22.2	8	4	X	X
1/26	0800	17°33'	154°06'	064	091	24.6	34.50	24.4	18	10	14	01	2	8	24.6	22.1	9	3	X	X
1/26	1100	17°09'	154°08'	065	001	24.7	34.36	24.5	20	11	15	01	2	8	26.7	22.7	9	2	38	2
1/26	1400	16°44'	154°10'	066	006	25.2	34.20	24.7	22	08	12	01	2	8	25.2	22.8	9	1	X	X
1/26	1700	16°15'	154°11'	067	001	25.2	34.18	24.7	25	08	13	03	2	8	25.8	23.0	9	7	X	X
1/26	2000	16°04'	154°28'	068	012	25.2	34.20	25.0	20	09	14	02	2	7	26.1	22.8	X	X	X	X
1/26	2300	16°05'	154°58'	069	012	25.2	34.23	25.1	21	09	15	02	2	7	25.0	22.9	X	2	X	X
1/27	0200	16°05'	155°28'	070	018	25.2	34.34	25.1	27	06	14	03	2	7	24.9	22.4	8	3	X	X
1/27	0500	16°06'	155°50'	071	012	25.4	34.19	25.4	27	05	14	00	2	7	25.1	21.9	X	X	X	X
1/27	0800	16°06'	156°18'	072	040	25.3	34.23	25.2	35	06	15	00	2	8	24.7	21.9	9	2	X	X
1/27	1100	16°08'	156°44'	073	006	25.8	34.26	25.1	01	06	16	01	1	8	28.3	23.1	9	2	44	2
1/27	1400	16°24'	156°57'	074	008	26.5	34.28	25.5	05	06	13	01	1	8	25.3	21.3	8	1	X	X
1/27	1700	16°49'	157°07'	075	008	26.0	34.28	25.1	05	06	14	02	1	8	25.7	21.7	8	2	X	X
1/27	2000	17°30'	157°15'	076	006	25.4	34.28	25.2	05	06	15	00	1	8	25.3	20.8	X	X	X	X
1/27	2300	17°39'	157°16'	077	035	25.1	34.24	24.9	06	08	16	00	1	8	25.0	20.8	8	1	X	X
1/28	0200	18°04'	157°20'	078	008	25.1	34.33	24.7	04	08	16	02	2	8	23.9	20.0	8	1	X	X
1/28	0500	18°25'	157°24'	079	027	25.0	34.80	24.8	09	05	16	00	2	7	23.5	19.3	X	X	X	X
1/28	0800	18°53'	157°30'	080	015	24.8	34.44	24.8	06	05	17	00	2	8	24.2	19.3	6	4	X	X

Table 1.--Record of observations at bathythermograph lowerings, Charles H. Gilbert cruise 51 (con.)

Date, 1961	Time (LT)	Latitude N.	Longitude W.	BT slide no.	Thermocline depth (m.)	Bkt. surface temp. (°C.)	Surface salinity (°/oo)	10-meter temp. (°C.)	Wind		Barometer (mb.)	Weather	Sea	Visibility	Air temp.		Cloud		Secchi depth (m.)	Forel color
									Direction (°T.)	Speed (kn.)					Dry bulb (°C.)	Wet bulb (°C.)	Type	Amount		
1/28	1100	19°21'	157°34'	081	091	25.3	34.54	25.3	04	03	18	01	1	8	23.7	18.8	4	2	55	2
1/28	1400	19°46'	157°38'	082	001	25.9	34.57	24.6	00	00	16	03	1	8	24.2	18.9	8	3	X	X
1/28	1700	20°14'	157°37'	083	003	25.7	34.54	24.8	00	00	16	01	1	8	25.6	19.4	9	1	X	X
1/28	2000	20°44'	157°42'	084	006	24.2	34.98	24.0	07	05	17	00	1	7	24.0	18.3	X	X	X	X
/The log sheet with BT information 085 to 105 was lost at sea./																				
2/4	0200	17°19'	162°31'	106	063	25.2	34.70	25.1	10	08	16	00	2	7	25.8	22.8	3	8	X	X
2/4	0500	17°37'	162°32'	107	040	25.2	34.71	25.2	09	09	16	01	2	7	24.7	22.2	8	3	X	X
2/4	0800	18°04'	162°34'	108	098	25.3	34.77	25.3	09	08	17	02	2	7	24.6	22.1	8	3	X	X
2/4	1100	18°28'	162°32'	109	005	25.4	34.74	25.4	09	08	18	01	2	8	26.4	22.8	8	4	33	1
2/4	1400	18°54'	162°31'	110	003	25.7	34.72	25.4	10	09	16	01	2	8	25.3	22.5	8	4	X	X
2/4	1700	19°20'	162°30'	111	005	25.8	34.67	25.3	11	10	15	01	2	8	25.0	22.1	8	2	X	X
2/4	2000	19°48'	162°29'	112	003	25.5	34.78	25.3	11	10	17	00	2	8	25.2	22.4	8	2	X	X
2/4	2300	20°17'	162°27'	113	006	25.5	34.76	25.4	11	10	19	00	2	8	24.7	21.9	8	1	X	X
2/5	0200	20°44'	162°25'	114	018	25.1	34.76	25.0	07	07	19	00	2	8	25.1	21.4	8	4	X	X
2/5	0500	21°06'	162°27'	115	037	24.3	35.05	24.4	08	11	19	01	2	8	24.0	21.6	8	3	X	X
2/5	0800	21°34'	162°26'	116	024	24.4	35.06	24.4	12	10	21	01	2	8	23.9	21.6	8	1	X	X
2/5	1100	22°02'	162°26'	117	043	24.5	35.04	24.4	14	13	22	01	2	8	25.3	22.2	8	1	38	1
2/7	0500	22°06'	160°58'	118	007	23.9	35.13	23.8	00	00	20	03	1	8	23.0	19.4	4	2	X	X
2/7	0800	22°08'	161°29'	119	061	24.0	35.07	24.0	32	01	20	03	1	8	23.6	18.3	4	3	X	X
2/7	1100	22°10'	161°58'	120	003	24.9	34.99	24.7	24	04	20	02	1	8	25.4	20.0	4	3	48	1
2/7	1400	22°11'	162°28'	121	039	25.8	35.02	24.5	32	04	18	02	2	8	26.7	20.6	2	9	X	X
2/7	1700	22°40'	162°30'	122	001	25.2	35.07	24.1	34	06	17	01	2	8	24.0	19.6	8	4	X	X
2/7	2000	23°06'	162°30'	128[2/]	006	24.5	35.07	24.4	34	07	19	01	2	8	23.9	19.3	8	1	X	X
2/7	2300	23°34'	162°28'	124	007	23.3	35.17	23.2	32	09	20	00	2	8	23.5	20.3	X	X	X	X
2/8	0200	23°58'	162°28'	125	018	23.4	35.18	23.2	36	23	19	00	3	8	21.1	19.2	X	X	X	X
2/8	0500	23°58'	162°48'	126	031	23.2	35.16	23.3	36	23	19	00	3	7	21.7	18.6	X	7	X	X
2/8	0800	23°57'	163°12'	127	063	23.7	35.08	23.8	36	23	21	02	3	7	21.1	17.9	8	7	X	X
2/8	1100	23°56'	163°47'	128	029	22.4	35.26	22.4	01	20	23	01	3	7	20.1	15.0	8	4	X	X
2/8	1400	23°56'	164°15'	129	067	22.5	35.23	22.7	01	19	22	02	3	7	23.1	16.7	8	4	X	X
2/8	1700	23°56'	164°42'	130	052	22.6	35.22	22.7	01	22	22	03	4	7	19.9	15.6	8	6	X	X
2/8	2000	23°57'	165°02'	131	052	22.4	35.26	22.3	05	24	24	00	4	7	19.9	15.0	X	X	X	X
2/8	2300	23°57'	165°22'	132	067	22.5	35.23	22.6	07	20	24	00	4	6	19.7	15.3	X	X	X	X
2/9	0200	23°58'	165°42'	133	055	22.6	35.24	22.6	04	23	23	00	4	6	21.1	15.6	X	X	X	X
2/9	0500	23°57'	166°05'	134	055	22.6	35.23	22.7	05	23	24	00	4	6	19.3	15.0	X	X	X	X
2/9	2000	23°46'	166°34'	135	061	22.1	33.30	22.1	06	22	27	00	4	6	20.2	16.7	X	X	X	X
2/9	2300	23°45'	167°00'	136	098	22.9	35.20	22.9	09	22	27	50	4	6	19.9	17.5	X	X	X	X
2/10	0900	22°39'	167°12'	137	X	23.1	35.21	X	09	24	25	20	5	6	22.2	18.3	4	9	X	X
2/10	1000	22°32'	167°11'	138	082	23.1	35.18	23.3	09	24	25	20	5	6	22.2	18.3	4	9	X	X
2/10	1300	22°10'	167°08'	139	073	23.4	35.18	23.2	10	20	22	01	5	6	22.9	18.9	4	7	X	X
2/10	1600	21°45'	167°06'	140	061	24.8	34.92	24.9	08	25	20	02	5	6	22.8	19.2	4	7	X	X

2/ BT numbers 128-223 are on +11 time.

Table 1.--Record of observations at bathythermograph lowerings, Charles H. Gilbert cruise 51 (con.)

Date, 1961	Time (LT)	Latitude N.	Longitude W.	BT slide no.	Thermocline depth (m.)	Bkt. surface temp. (°C.)	Surface salinity (°/oo)	10-meter temp. (°C.)	Wind		Barometer (mb.)	Weather	Sea	Visibility	Air temp.		Cloud		Secchi depth (m.)	Forel color
									Direction (°T.)	Speed (kn.)					Dry bulb (°C.)	Wet bulb (°C.)	Type	Amount		
2/10	1900	21°21'	167°03'	141	031	24.7	34.93	24.9	08	20	20	00	5	6	23.0	20.2	X	X	X	X
2/10	2200	20°57'	167°00'	142	087	24.4	35.06	24.4	08	22	21	00	5	6	23.9	20.6	X	X	X	X
2/11	0100	20°32'	166°59'	143	085	25.4	34.84	25.4	09	21	19	00	5	6	24.4	21.4	X	X	X	X
2/11	0400	20°06'	166°58'	144	031	25.2	34.79	25.1	08	22	17	00	5	6	24.2	21.7	X	X	X	X
2/11	0700	19°40'	166°57'	145	001	25.3	34.77	25.2	08	22	17	15	4	6	24.6	21.9	8	6	X	X
2/11	1000	19°14'	166°56'	146	006	25.3	34.72	24.9	07	20	19	15	6	4	23.9	22.8	8	7	X	X
2/11	1300	18°51'	167°00'	147	006	25.3	34.79	25.1	10	18	16	02	6	4	26.1	23.1	1	6	X	X
2/11	1600	18°25'	167°02'	148	085	25.2	34.86	25.3	08	20	15	52	4	5	23.6	22.6	0	8	X	X
2/11	1900	18°00'	167°04'	149	085	25.4	34.66	25.4	08	21	15	15	4	5	24.3	22.2	8	5	X	X
2/11	2200	17°36'	167°06'	150	098	25.4	34.62	25.4	07	17	16	00	4	5	24.7	22.5	X	X	X	X
2/12	0100	17°11'	167°08'	151	040	25.4	34.60	25.3	09	16	15	00	4	5	25.1	22.7	X	X	X	X
2/12	0400	16°46'	167°11'	152	024	25.4	34.71	25.4	09	17	13	00	4	5	25.6	22.8	X	X	X	X
2/12	0700	16°22'	167°13'	153	006	25.6	34.41	25.6	08	20	13	00	3	6	25.1	22.8	4	2	X	X
2/12	1000	15°58'	167°15'	154	006	25.6	34.44	25.6	10	17	15	03	3	6	25.6	22.2	4	3	X	X
2/12	1300	15°58'	167°40'	155	006	26.0	34.34	25.8	07	18	12	02	3	6	30.0	24.4	4	7	X	X
2/12	1600	15°58'	168°13'	156	027	25.7	34.51	25.5	08	17	11	02	3	6	25.7	22.5	4	7	X	X
2/12	1900	15°58'	168°46'	157	091	25.9	34.37	25.8	07	19	12	00	3	6	25.6	22.3	8	7	X	X
2/12	2200	15°58'	169°19'	158	073	25.7	34.59	25.6	08	18	13	00	3	6	26.0	22.9	X	X	X	X
2/13	0100	16°09'	169°35'	159	043	25.6	34.60	25.7	08	16	13	00	3	6	26.2	22.9	X	X	X	X
2/13	0400	16°30'	169°38'	160	007	25.8	34.45	25.7	08	18	12	00	3	6	26.1	22.9	X	X	X	X
2/15	0100	16°46'	169°10'	161	061	25.4	34.81	25.5	09	16	13	00	2	7	25.6	23.1	X	X	X	X
2/15	0400	17°01'	169°06'	162	043	25.5	34.82	25.6	09	16	12	00	2	7	26.7	23.4	X	X	X	X
2/15	0700	17°28'	169°10'	163	031	25.6	34.40	25.4	10	14	13	00	2	7	24.7	22.5	8	4	X	X
2/15	1000	17°55'	169°14'	164	036	25.6	34.78	25.5	09	17	14	02	3	7	25.6	22.8	8	4	X	X
2/15	1300	18°22'	169°18'	165	009	25.7	34.71	25.7	09	17	14	50	3	7	25.4	22.5	8	4	31	2
2/15	1600	18°46'	169°18'	166	009	25.7	34.66	25.6	09	16	13	03	3	7	25.6	22.5	4	5	X	X
2/15	1900	19°08'	169°20'	167	037	25.3	34.86	25.4	08	13	14	01	2	7	25.2	22.1	8	2	X	X
2/15	2300	19°27'	169°20'	168	049	25.4	34.81	25.3	10	17	16	00	2	7	25.7	22.9	X	X	X	X
2/16	0100	19°46'	169°20'	169	018	25.1	34.94	25.0	08	18	16	00	2	7	25.4	22.3	X	X	X	X
2/16	0400	20°08'	169°21'	170	037	25.2	34.79	25.2	07	16	15	00	2	7	25.1	21.9	X	X	X	X
2/16	0700	20°38'	169°22'	171	043	25.2	34.78	25.1	07	15	16	00	2	7	26.1	22.2	9	3	X	X
2/16	1000	21°08'	169°22'	172	067	25.4	34.75	25.2	08	14	18	01	3	7	24.6	21.6	8	2	X	X
2/16	1300	21°36'	169°23'	173	009	25.1	34.94	25.1	07	18	17	01	3	7	24.9	21.7	8	3	37	2
2/16	1600	22°01'	169°26'	174	006	24.4	35.07	24.1	07	15	16	02	3	7	26.4	22.2	8	2	X	X
2/16	1900	22°30'	169°29'	175	008	23.6	35.20	23.4	07	13	17	03	3	7	23.8	21.4	8	5	X	X
2/16	2300	22°49'	169°32'	176	034	23.7	35.16	23.9	08	14	19	00	2	7	23.9	21.3	X	X	X	X
2/17	0100	23°08'	169°34'	177	014	24.0	35.12	23.9	08	12	19	00	2	7	23.6	21.1	X	X	X	X
2/17	0400	23°28'	169°36'	178	041	23.3	35.20	23.3	09	12	18	00	2	7	23.2	20.6	X	X	X	X
2/17	0700	23°58'	169°39'	179	024	23.3	35.19	23.3	11	11	19	00	2	7	23.1	20.2	8	2	X	X
2/17	1000	24°01'	169°10'	180	037	23.4	35.21	23.4	10	07	20	02	2	7	23.1	20.0	8	2	X	X

Table 1.--Record of observations at bathythermograph lowerings, Charles H. Gilbert cruise 51 (con.)

Date, 1961	Time (LT)	Latitude N.	Longitude W.	BT slide no.	Thermocline depth (m.)	Bkt. surface temp. (°C.)	Surface salinity (°/oo)	10-meter temp. (°C.)	Wind		Barometer (mb.)	Weather	Sea	Visibility	Air temp.		Cloud		Secchi depth (m.)	Forel color
									Direction (°T.)	Speed (kn.)					Dry bulb (°C.)	Wet bulb (°C.)	Type	Amount		
2/17	1300	24°02'	168°40'	181	001	23.6	35.22	23.3	09	05	19	01	2	7	23.1	19.7	8	2	40	2
2/17	1600	24°02'	168°11'	182	006	23.9	35.20	23.3	09	07	18	02	2	8	23.6	20.3	8	2	X	X
2/17	1900	24°02'	167°39'	183	006	23.0	35.26	22.5	06	11	19	03	2	8	22.8	20.6	8	5	X	X
2/17	2250	24°02'	167°20'	184	006	23.6	35.16	23.6	08	11	18	00	2	8	22.3	19.4	X	X	X	X
2/18	0100	24°02'	166°58'	185	012	23.0	35.24	22.8	08	14	19	00	2	8	22.4	19.5	X	X	X	X
2/18	0400	23°58'	166°44'	186	049	22.6	35.21	22.5	06	11	17	00	2	8	22.1	19.9	X	X	X	X
2/19	1600	23°56'	166°02'	187	001	23.0	35.24	22.1	09	08	18	02	2	8	22.7	20.6	8	2	X	X
2/19	1900	23°60'	165°33'	188	012	22.8	35.23	22.8	07	11	19	02	2	8	22.8	20.0	8	2	X	X
2/19	2245	24°02'	165°16'	189	018	22.6	35.21	22.7	06	13	21	00	2	8	22.4	20.0	X	X	X	X
2/20	0100	24°02'	164°55'	190	037	22.6	35.22	22.5	09	13	21	00	2	8	22.5	19.3	X	X	X	X
2/20	0400	24°02'	164°34'	191	055	22.7	35.21	22.8	07	14	20	00	2	8	22.7	19.1	X	X	X	X
2/20	1000	23°08'	164°34'	192	009	23.8	35.09	23.8	06	16	21	00	3	7	23.6	20.6	8	2	X	X
2/20	1300	22°40'	164°34'	193	079	23.8	35.09	23.9	09	22	19	03	3	7	23.3	20.7	8	4	X	X
2/20	1600	22°10'	164°33'	194	019	24.1	35.06	24.1	09	19	17	02	4	8	23.6	21.1	8	4	X	X
2/20	1900	21°42'	164°33'	195	003	24.2	35.01	24.4	09	21	18	03	4	8	24.7	21.8	8	6	X	X
2/20	2200	21°15'	164°32'	196	031	24.9	34.83	24.9	08	19	18	00	4	8	24.4	21.6	X	X	X	X
2/21	0100	20°49'	164°32'	197	009	24.7	34.82	25.0	08	22	17	00	4	7	24.6	21.8	X	X	X	X
2/21	0400	20°23'	164°31'	198	006	24.9	34.84	24.8	09	19	16	00	4	8	25.0	22.2	X	X	X	X
2/21	0700	19°56'	164°30'	199	067	25.0	34.78	25.0	09	21	16	00	4	8	25.2	22.5	8	6	X	X
2/21	1000	19°57'	164°30'	200	052	24.9	34.86	24.8	09	21	17	01	4	8	25.0	21.9	8	4	X	X
2/21	1300	19°06'	164°31'	201	012	25.1	34.74	24.9	07	17	15	01	4	8	25.3	22.2	8	3	X	X
2/21	1600	18°38'	164°30'	202	098	25.2	34.77	25.2	09	18	14	03	4	8	25.1	22.9	8	4	X	X
2/21	1900	18°13'	164°31'	203	001	25.2	34.74	25.1	08	17	15	03	4	8	25.3	22.8	4	7	X	X
2/21	2200	17°44'	164°32'	204	040	25.2	34.76	25.1	07	20	16	00	4	8	25.0	22.7	X	X	X	X
2/22	0100	17°16'	164°32'	205	002	25.2	34.75	25.3	07	20	14	00	4	8	25.3	22.9	X	X	X	X
2/22	0400	16°46'	164°32'	206	006	25.2	34.24	25.1	07	17	12	00	4	8	25.0	22.8	X	X	X	X
2/22	0700	16°18'	164°32'	207	056	25.3	34.78	25.1	09	20	13	00	4	8	25.3	22.8	9	6	X	X
2/22	1000	15°58'	164°27'	208	007	25.3	34.74	25.4	08	17	14	01	4	8	25.6	23.0	8	5	X	X
2/22	1300	15°58'	164°08'	209	023	25.3	34.79	25.4	09	16	12	01	4	7	25.4	22.9	8	3	X	X
2/22	1600	15°58'	163°50'	210	X	25.2	34.76	X	08	24	11	15	4	7	25.4	22.5	8	4	X	X
2/22	1900	15°58'	163°30'	211	046	25.3	34.62	25.3	08	21	12	03	4	7	25.2	22.7	8	6	X	X
2/22	2200	16°00'	163°10'	212	040	25.2	34.73	25.5	08	21	14	00	4	7	24.9	22.8	X	X	X	X
2/23	0100	16°03'	162°50'	213	024	25.2	34.80	25.2	09	20	13	00	4	7	25.1	22.8	X	X	X	X
2/23	0400	16°06'	162°30'	214	012	25.3	34.58	25.3	09	21	12	00	4	7	25.3	22.5	X	X	X	X
2/23	0700	16°09'	162°11'	215	021	25.5	34.40	25.4	08	22	14	00	4	7	25.8	21.9	8	2	X	X
2/23	1000	16°12'	161°56'	216	073	25.4	34.39	25.4	09	22	14	02	4	7	25.6	21.9	8	2	X	X
2/23	1300	16°13'	161°38'	217	055	25.4	34.41	25.6	09	18	13	03	4	7	25.3	21.8	8	3	X	X
2/23	1600	16°12'	161°18'	218	038	25.4	34.40	25.4	08	16	12	01	4	7	25.3	21.6	8	2	X	X
2/23	1900	16°11'	160°58'	219	046	25.3	34.38	25.3	08	21	12	00	4	7	25.2	21.9	X	X	X	X
2/23	2200	16°10'	160°38'	220	073	25.1	34.38	25.4	07	19	14	03	4	7	24.9	22.2	8	5	X	X

Table 1.--Record of observations at bathythermograph lowerings, Charles H. Gilbert cruise 51 (con.)

Date, 1961	Time (LT)	Latitude N.	Longitude W.	BT slide no.	Thermocline depth (m.)	Bkt. surface temp. (°C.)	Surface salinity (°/oo)	10-meter temp. (°C.)	Wind		Barometer (mb.)	Weather	Sea	Visibility	Air temp.		Cloud		Secchi depth (m.)	Forel color
									Direction (°T.)	Speed (kn.)					Dry bulb (°C.)	Wet bulb (°C.)	Type	Amount		
2/24	0100	16°08'	160°18'	221	061	25.1	34.39	25.3	07	16	13	00	4	7	24.9	22.2	X	X	X	X
2/24	0400	16°08'	159°59'	222	040	25.1	34.40	25.0	08	19	12	00	4	7	24.7	21.9	X	X	X	X
2/24	0700	16°07'	159°38'	223	061	25.0	34.37	25.3	08	19	13	03	4	7	25.0	22.4	8	6	X	X
2/24	1100	16°19'	159°30'	224	034	24.9	34.35	24.7	08	22	14	25	4	7	25.6	22.5	8	6	X	X
2/24	1400	16°49'	159°32'	225	014	25.0	34.49	25.0	08	22	13	15	4	7	25.3	22.2	8	6	X	X
2/24	1700	17°19'	159°34'	226	037	25.0	34.38	24.9	08	17	12	02	4	7	26.1	22.8	8	6	X	X
2/24	2000	17°49'	159°36'	227	008	25.0	34.42	25.2	08	21	14	01	4	7	24.8	22.1	8	1	X	X
2/24	2300	18°17'	159°32'	228	091	25.2	34.40	25.3	08	18	15	00	4	7	24.7	21.7	X	X	X	X
2/25	0200	18°46'	159°28'	229	054	25.3	34.44	25.2	12	16	15	00	3	7	24.9	22.1	X	X	X	X
2/25	0500	19°13'	159°24'	230	070	25.0	34.42	24.9	12	15	14	63	3	7	25.6	22.3	X	X	X	X
2/25	0800	19°42'	159°22'	231	003	25.0	34.52	24.9	08	22	16	25	4	7	24.7	21.5	8	7	X	X
2/25	1100	20°10'	159°23'	232	073	25.1	34.54	25.1	09	20	17	01	4	7	24.3	21.4	9	2	X	X
2/25	1400	20°32'	159°25'	233	001	24.8	34.60	24.6	10	14	15	01	4	7	25.0	21.5	9	2	X	X
2/25	1700	20°59'	159°28'	234	032	24.5	34.61	24.4	10	22	14	02	4	7	24.4	21.1	9	2	X	X
2/25	2000	21°27'	159°39'	235	027	23.6	35.00	23.6	07	20	17	00	3	7	24.7	21.4	X	X	X	X
2/25	2300	21°50'	159°48'	236	001	23.4	35.14	23.3	08	19	18	00	3	7	23.2	20.1	X	X	X	X
2/26	0200	21°14'	159°44'	237	007	23.2	35.19	23.3	04	17	17	00	3	7	23.9	20.4	X	X	X	X
2/26	0500	22°38'	159°28'	238	085	23.0	35.17	22.8	09	19	16	00	3	7	22.9	20.3	X	X	X	X
2/26	0800	23°02'	159°26'	239	041	22.8	35.21	22.7	10	18	18	00	4	7	22.8	20.2	8	6	X	X
2/26	1100	23°28'	159°25'	240	031	22.7	35.23	22.8	09	19	19	01	4	7	23.1	19.7	5	1	X	X
2/26	1400	23°53'	159°23'	241	027	22.8	35.22	22.8	09	19	18	01	4	7	23.3	20.2	8	1	X	X
2/26	1700	24°00'	159°12'	242	037	22.5	35.26	22.5	12	19	17	03	4	7	23.8	20.3	8	2	X	X
2/26	2000	24°02'	158°54'	243	034	22.3	35.27	22.4	12	19	19	03	4	7	22.9	19.8	8	3	X	X
2/26	2300	24°05'	158°39'	244	061	23.2	35.05	22.3	11	20	20	00	4	7	22.9	19.6	X	X	X	X
2/27	0200	24°08'	158°22'	245	069	23.4	35.01	23.3	11	21	19	00	4	7	23.0	19.7	X	X	X	X
2/27	0500	24°11'	158°06'	246	040	22.9	35.06	23.0	12	16	19	00	4	7	22.5	19.7	X	X	X	X
2/27	0800	24°11'	157°51'	247	061	23.0	35.01	22.9	09	15	20	00	4	7	22.5	19.4	8	6	X	X
2/27	1100	24°07'	157°39'	248	049	23.0	35.04	22.9	02	06	21	25	3	7	23.1	20.3	6	7	38	2
2/27	1400	23°42'	157°37'	249	009	23.3	35.02	23.2	10	14	19	01	3	7	23.0	19.8	8	5	X	X
2/27	1700	23°12'	157°36'	250	024	23.3	35.05	23.3	09	13	18	02	3	7	23.2	20.6	8	5	X	X
2/27	2000	22°44'	157°34'	251	020	23.4	35.00	23.5	10	18	18	00	4	7	23.1	20.7	X	X	X	X
2/27	2300	22°18'	157°32'	252	049	23.5	34.91	23.6	10	18	19	00	4	7	23.3	20.2	X	X	X	X
2/28	0200	21°52'	157°30'	253	052	23.4	34.96	23.5	11	16	18	60	4	7	23.2	20.1	X	X	X	X

Table 2.--Record of observations at bathythermograph lowerings, Charles H. Gilbert cruise 52
(Recorded on Laboratory BT and environment log. Coding of data follows U.S. Navy Hydrographic Office, 1956.)

Date, 1961	Time (LT)	Latitude N.	Longitude W.	BT slide no.	Thermocline depth (m.)	Bkt. surface temp. (°C.)	Surface salinity (°/oo)	10-meter temp. (°C.)	Wind		Barometer (mb.)	Weather	Sea	Visibility	Air temp.		Cloud		Secchi depth (m.)	Forel color
									Direction (°T.)	Speed (kn.)					Dry bulb (°C.)	Wet bulb (°C.)	Type	Amount		
4/4	1400	21°43'	158°27'	001	018	25.0	34.74	25.2	07	19	17	03	4	8	22.9	18.3	8	6	X 1/	X
4/4	1700	21°54'	158°45'	002	024	24.5	34.81	25.2	05	17	16	01	3	8	22.6	17.0	8	2	X	X
4/4	2000	22°08'	159°06'	003	052	24.3	34.86	24.4	06	12	17	02	3	8	22.4	18.2	8	2	X	X
4/5	1800	22°07'	160°23'	004	014	23.7	35.17	23.9	09	13	14	00	3	8	23.4	18.6	6	1	X	X
4/5	2100	22°07'	160°51'	005	012	23.7	35.20	23.8	07	12	15	00	3	8	22.9	18.6	X	X	X	X
4/6	0800	22°02'	162°29'	006	064	23.4	35.17	23.9	10	13	14	02	3	8	23.2	16.6	1	2	X	X
4/6	1100	22°02'	162°55'	007	006	23.7	35.19	23.5	12	07	15	03	3	8	23.8	19.6	6	5	X	X
4/6	1400	22°02'	163°16'	008	003	24.4	34.97	24.1	12	07	13	03	3	8	25.0	20.3	6	6	X	X
4/6	1700	22°01'	163°42'	009	003	25.6	34.94	24.4	09	03	13	15	2	8	24.0	20.3	6	7	X	X
4/6	2000	22°00'	164°07'	010	024	25.1	34.92	24.4	03	07	14	15	3	8	24.1	20.3	6	7	X	X
4/6	2300	21°58'	164°40'	011	003	24.7	34.83	24.6	02	10	15	00	3	8	24.0	20.5	X	X	X	X
4/7	0200	21°57'	165°09'	012	024	24.3	34.89	24.7	04	14	14	00	3	8	23.9	20.3	X	X	X	X
4/7	0800	21°55'	165°56'	013	031	24.4	35.08	24.4	05	22	15	15	4	7	22.4	20.1	6	7	X	X
4/7	1100	22°07'	166°04'	014	024	24.2	35.12	24.3	05	24	16	50	4	7	22.2	18.9	0	7	X	X
4/7	1400	22°22'	166°08'	015	003	24.3	34.99	24.1	05	22	16	02	4	7	21.7	17.7	6	7	X	X
4/7	1700	22°40'	166°13'	016	031	24.4	34.98	24.4	05	16	15	02	4	7	22.3	17.9	6	7	X	X
4/7	2000	22°58'	166°14'	017	027	24.3	35.13	24.1	06	11	17	00	4	7	21.2	16.7	X	X	X	X
4/7	2300	23°17'	166°14'	018	058	23.9	35.13	24.0	04	15	18	00	3	7	20.6	16.1	X	X	X	X
4/9	0800	24°00'	166°40'	019	026	23.7	35.13	23.7	05	11	16	00	3	7	20.3	15.6	6	7	X	X
4/9	1100	24°16'	167°01'	020	003	23.1	35.18	22.7	06	13	17	02	3	7	20.4	16.0	6	7	X	X
4/9	1400	23°58'	167°07'	021	005	22.6	35.20	22.4	05	07	16	02	2	7	20.7	16.4	6	7	X	X
4/9	1700	23°30'	167°08'	022	021	22.8	35.21	22.8	06	10	14	02	2	7	21.1	16.9	6	7	X	X
4/9	2000	23°08'	167°07'	023	059	23.7	35.15	23.7	01	14	14	50	2	6	20.6	18.1	X	X	X	X
4/10	0200	22°41'	167°05'	024	060	23.9	35.02	24.00	02	06	12	50	2	6	21.0	19.4	X	X	X	X
4/10	0800	22°23'	166°56'	025	059	24.3	35.06	24.2	36	22	10	15	4	7	21.4	20.0	6	7	X	X
4/10	1345	22°10'	167°00'	026	024	24.6	34.96	24.6	33	14	11	02	3	7	22.8	19.1	6	7	X	X
4/10	1700	21°59'	167°21'	027	005	23.9	34.15	23.9	32	12	10	01	2	7	22.7	18.3	6	3	X	X
4/10	2000	21°43'	167°32'	028	037	23.8	35.20	23.8	28	10	11	02	2	7	22.2	17.8	8	3	X	X
4/11	0200	20°50'	167°06'	029	037	24.3	X	24.1	14	02	10	00	2	7	22.3	17.7	X	X	X	X
4/11	0800	20°04'	166°41'	030	024	25.2	34.78	25.2	01	08	12	00	2	7	23.3	18.8	8	7	X	X
4/11	1100	19°44'	166°20'	031	049	25.6	34.64	25.3	01	09	13	02	2	7	24.8	20.7	1	7	X	X
4/11	1400	19°22'	166°02'	032	012	25.5	34.67	25.4	05	11	12	15	2	7	25.5	21.9	6	7	X	X
4/11	1700	19°18'	166°14'	033	018	25.5	34.68	25.3	02	03	11	50	2	7	23.1	21.8	X	9	X	X
4/11	2000	19°23'	166°42'	034	049	25.4	34.66	25.3	07	12	13	15	2	7	23.7	22.2	8	7	X	X
4/12	0200	19°36'	167°27'	035	073	25.4	34.79	25.3	09	10	14	80	2	6	24.8	22.8	X	X	X	X
4/12	0800	19°40'	168°15'	036	024	25.2	34.49	25.3	13	07	14	16	2	6	23.9	22.3	8	7	X	X
4/12	1100	19°35'	168°38'	037	006	25.4	34.67	25.4	25	08	15	20	2	6	24.8	22.7	8	7	X	X
4/12	1400	19°22'	168°43'	038	005	25.5	34.81	25.1	09	09	14	15	2	6	24.7	22.7	6	7	X	X
4/12	1700	18°54'	168°41'	039	002	25.6	34.80	25.2	05	09	12	01	2	7	25.9	23.6	8	7	X	X
4/12	2000	18°29'	168°40'	040	003	26.0	34.69	25.7	14	07	14	15	2	7	25.3	23.4	8	7	X	X

1/ X indicates that no observation was recorded.

Table 2.--Record of observations at bathythermograph lowerings, Charles H. Gilbert cruise 52 (con.)

Date, 1961	Time (LT)	Latitude N.	Longitude W.	BT slide no.	Thermocline depth (m.)	Bkt. surface temp. (°C.)	Surface salinity (°/oo)	10-meter temp. (°C.)	Wind		Barometer (mb.)	Weather	Sea	Visibility	Air temp.		Cloud		Secchi depth (m.)	Forel color
									Direction (°T.)	Speed (kn.)					Dry bulb (°C.)	Wet bulb (°C.)	Type	Amount		
4/13	0200	17°35'	168°35'	041	024	25.7	34.71	25.8	10	18	15	00	2	7	25.7	23.2	X	X	X	X
4/13	0800	17°01'	168°20'	042	015	25.8	34.66	25.7	11	14	14	00	3	7	26.3	23.2	8	6	X	X
4/13	1400	16°43'	168°59'	043	012	26.1	34.67	26.6	08	18	14	01	3	7	26.9	22.8	8	4	X	X
4/14	0800	16°38'	169°31'	044	003	25.9	34.73	25.7	08	14	13	03	3	7	26.2	22.7	4	6	X	X
4/14	1115	16°22'	169°24'	045	003	26.1	34.72	25.8	10	11	14	03	3	7	26.8	22.8	4	4	X	X
4/17	1000	16°42'	169°06'	046	020	25.9	34.56	25.9	15	06	13	52	2	6	25.0	23.2	6	8	X	X
4/17	1300	16°35'	168°57'	047	018	26.1	34.66	26.7	16	12	13	15	2	6	26.0	23.9	6	8	X	X
4/18	1230	16°47'	169°47'	048	002	26.3	34.65	26.4	11	10	16	15	2	6	26.5	24.7	6	7	X	X
4/19	1705	17°03'	169°26'	049	009	25.8	34.68	25.6	12	09	12	02	2	7	25.9	23.1	6	8	X	X
4/19	2000	17°28'	169°16'	050	037	25.7	35.56	25.7	10	10	14	01	2	7	25.6	23.1	8	7	X	X
4/19	2300	17°55'	169°05'	051	007	25.2	34.65	25.6	09	09	15	00	2	7	25.3	23.4	X	X	X	X
4/20	0200	18°21'	168°53'	052	009	25.4	34.72	25.5	05	09	15	50	2	7	23.9	22.3	X	X	X	X
4/20	0800	19°08'	168°33'	053	030	25.8	34.66	25.8	12	09	15	15	2	7	26.0	22.7	6	7	X	X
4/20	1100	19°38'	168°20'	054	012	26.0	34.69	25.9	14	10	16	01	3	7	26.1	22.9	8	6	X	X
4/20	1400	20°05'	168°08'	055	012	26.0	34.65	25.9	12	09	16	15	3	7	25.1	22.8	6	7	X	X
4/20	1700	20°31'	167°54'	056	014	25.7	34.34	25.7	36	05	15	15	2	7	24.3	22.0	6	8	X	X
4/20	2000	20°57'	167°40'	057	037	25.3	34.59	25.3	03	13	16	50	3	7	24.4	22.6	8	8	X	X
4/21	0200	21°41'	167°18'	058	014	25.0	34.65	25.1	04	19	17	00	3	7	22.9	21.7	X	X	X	X
4/21	0800	22°31'	166°55'	059	053	24.2	34.91	24.2	06	11	19	00	3	7	23.1	20.4	8	7	X	X
4/21	1100	22°56'	166°43'	060	078	24.3	34.90	24.4	05	14	20	02	3	7	23.6	20.9	8	7	X	X
4/21	1400	23°20'	166°32'	061	024	23.9	35.07	24.0	05	18	19	01	3	7	23.1	19.8	4	6	X	X
4/26	1100	23°28'	166°26'	062	044	23.9	35.04	24.1	06	27	20	02	6	7	23.4	17.7	8	6	X	X
4/26	1400	23°06'	166°38'	063	055	24.2	34.98	24.2	04	22	19	16	5	7	22.8	20.9	6	7	X	X
4/26	1700	22°46'	166°49'	064	056	23.9	35.01	23.8	07	25	17	25	5	7	23.6	22.0	6	9	X	X
4/27	0000	22°12'	167°07'	065	038	24.8	34.87	24.9	07	22	18	81	5	7	24.4	21.7	X	X	X	X
4/27	0800	21°47'	166°26'	066	034	25.2	34.72	25.2	06	22	16	80	4	6	23.2	20.9	6	8	X	X
4/27	1100	21°36'	167°04'	067	036	25.0	34.79	25.1	04	20	16	15	4	6	23.9	21.6	0	8	X	X
4/27	1400	21°24'	166°43'	068	024	25.1	34.87	25.1	09	20	15	01	4	6	23.9	21.1	4	7	X	X
4/27	1700	21°13'	166°23'	069	037	24.8	34.97	24.8	09	19	14	03	4	6	23.8	21.3	6	8	X	X
4/27	2000	21°04'	166°06'	070	024	24.6	34.98	24.8	09	22	14	15	4	6	23.2	20.7	6	7	X	X
4/28	0200	20°49'	165°34'	071	030	24.8	34.98	24.8	09	19	13	00	4	6	24.0	21.7	X	X	X	X
4/28	0800	20°34'	165°00'	072	049	24.9	34.79	24.9	11	20	14	25	4	6	23.3	21.4	4	7	X	X
4/28	1100	20°15'	164°52'	073	053	25.3	34.80	25.1	09	16	15	02	4	6	24.7	22.1	4	7	X	X
4/28	1400	19°55'	164°45'	074	032	25.2	34.80	25.0	10	17	13	15	4	6	24.4	22.6	4	7	X	X
4/28	1700	19°37'	164°39'	075	006	25.3	34.81	25.3	09	21	12	02	4	6	24.7	22.3	2	7	X	X
4/28	2000	19°16'	164°30'	076	021	25.2	34.75	25.3	09	19	13	02	4	6	25.0	23.1	4	7	X	X
4/29	0200	19°19'	163°53'	077	X	25.6	34.75	X	05	09	13	00	4	6	25.9	23.4	X	X	X	X
4/29	0800	19°22'	163°15'	078	018	25.7	34.81	25.8	13	17	14	16	3	6	23.4	21.9	0	7	X	X
4/29	1100	19°26'	162°49'	079	018	25.7	34.75	25.8	14	21	14	25	4	6	23.9	22.1	0	8	X	X
4/29	1400	19°30'	162°30'	080	022	25.7	34.42	25.7	14	22	12	02	4	6	25.3	22.6	4	8	X	X

Table 2.--Record of observations at bathythermograph lowerings, Charles H. Gilbert cruise 52 (con.)

Date, 1961	Time (LT)	Latitude N.	Longitude W.	BT slide no.	Thermocline depth (m.)	Bkt. surface temp. (°C.)	Surface salinity (°/oo)	10-meter temp. (°C.)	Wind		Barometer (mb.)	Weather	Sea	Visibility	Air temp.		Cloud		Secchi depth (m.)	Forel color
									Direction (°T.)	Speed (kn.)					Dry bulb (°C.)	Wet bulb (°C.)	Type	Amount		
4/29	1700	19°34'	162°11'	081	017	25.6	34.43	25.6	11	14	12	01	4	6	25.0	22.3	6	7	X	X
4/29	2000	19°39'	161°52'	082	019	25.5	34.43	25.5	11	13	14	02	4	6	25.1	22.5	6	7	X	X
4/30	0200	19°40'	161°17'	083	015	25.5	34.41	25.4	12	17	14	00	3	6	25.1	22.2	X	X	X	X
4/30	0800	19°41'	160°41'	084	031	25.4	34.49	25.4	11	13	14	03	3	6	25.2	21.9	6	9	X	X
4/30	1100	19°32'	160°21'	085	018	25.4	34.48	25.8	16	18	15	02	3	6	25.6	23.0	0	8	X	X
4/30	1400	19°21'	159°59'	086	026	25.4	34.50	25.3	16	16	14	02	3	6	25.3	23.0	0	8	X	X
4/30	1700	19°06'	159°44'	087	024	25.2	34.47	25.2	15	13	13	02	3	6	25.5	23.2	0	8	X	X
4/30	2000	18°58'	159°33'	088	012	25.1	34.50	25.1	12	15	14	02	3	6	25.2	23.1	X	X	X	X
5/1	0200	18°47'	159°20'	089	024	25.4	34.46	25.3	14	14	15	00	3	6	25.1	22.9	X	X	X	X
5/1	0800	18°31'	158°41'	090	021	25.3	34.46	25.3	14	19	15	02	4	6	25.1	22.2	4	8	X	X
5/1	1100	18°27'	158°34'	091	017	25.2	34.44	25.2	14	18	17	02	4	6	25.7	22.3	4	8	X	X
5/1	1400	18°27'	158°27'	092	019	25.1	34.43	25.2	11	15	16	02	4	6	25.1	22.4	4	8	X	X
5/1	1700	18°30'	158°22'	093	024	25.1	34.42	25.1	11	18	15	02	4	6	25.5	23.0	4	8	X	X
5/1	2000	18°52'	158°21'	094	012	25.0	34.46	25.0	13	15	17	02	4	6	25.2	22.2	X	X	X	X
5/1	2300	19°22'	158°17'	095	023	25.0	34.47	24.7	13	14	18	02	3	6	25.1	22.8	X	X	X	X
5/2	0200	19°51'	158°13'	096	015	24.8	34.47	24.7	10	15	17	02	3	6	24.9	22.8	X	X	X	X
5/2	0500	20°18'	158°10'	097	006	25.4	34.46	25.2	07	14	15	02	3	6	25.3	22.8	X	X	X	X
5/2	0800	20°45'	158°03'	098	031	25.3	34.52	25.3	07	16	16	01	3	7	25.4	21.9	5	6	X	X
5/2	1100	21°03'	157°55'	099	003	25.2	34.61	25.0	08	14	18	02	2	7	25.5	22.3	5	6	X	X
5/4	1730	20°51'	157°43'	100	006	25.7	34.47	25.7	08	12	17	02	4	8	25.7	22.7	8	3	X	X
5/4	2000	20°31'	157°36'	101	015	25.5	34.51	25.4	11	21	18	00	4	7	25.6	22.7	X	X	X	X
5/4	2300	20°09'	157°34'	102	X	25.4	34.49	X	08	24	19	00	4	7	25.4	23.1	X	X	X	X
5/5	0200	19°45'	157°27'	103	X	25.4	34.55	25.3	07	19	18	00	4	6	24.7	22.3	X	8	X	X
5/5	0500	19°21'	157°20'	104	X	25.5	34.56	X	00	00	18	01	4	6	24.6	22.5	X	7	X	X
5/5	0800	19°04'	157°33'	105	018	25.6	34.51	X	14	19	19	03	4	8	25.1	21.9	4	3	X	X
5/5	1120	18°58'	157°56'	106	X	25.0	34.50	X	11	14	18	02	4	8	25.6	22.1	4	3	X	X
5/5	1400	18°49'	158°18'	107	009	25.3	34.49	25.2	10	17	17	03	4	8	26.0	22.7	4	4	X	X
5/5	1700	18°38'	158°41'	108	011	25.3	34.45	25.2	10	18	16	03	4	8	25.3	22.6	4	7	X	X
5/5	2000	18°26'	159°04'	109	012	25.2	34.46	25.2	09	18	17	01	4	7	25.3	22.9	X	4	X	X
5/6	0200	18°12'	158°46'	110	019	25.1	34.47	25.2	11	14	17	02	4	7	25.0	21.7	X	4	X	X
5/6	0800	18°03'	158°29'	111	026	25.3	34.48	25.3	09	25	18	01	6	7	25.6	22.2	4	3	X	X
5/6	1200	18°17'	158°14'	112	027	25.2	34.48	25.2	10	21	18	03	5	7	25.1	21.9	4	6	X	X
5/6	1600	18°34'	157°56'	113	020	25.0	34.58	25.0	11	20	16	03	4	7	26.6	22.7	4	6	X	X
5/6	2000	18°46'	157°33'	114	026	25.5	34.52	25.6	10	18	17	25	4	6	23.3	21.9	X	7	X	X
5/7	0000	X	X	115	X	X	X	X	13	32	18	01	5	6	24.7	21.4	X	4	X	X
5/7	0400	19°15'	156°36'	116	014	25.2	34.70	25.4	05	07	17	80	4	6	22.8	20.6	6	8	X	X
5/7	0800	19°35'	156°10'	117	011	24.7	34.49	24.7	06	04	18	16	2	8	25.1	20.9	4	6	X	X
5/8	1030	20°25'	156°15'	118	023	24.8	34.60	24.8	08	21	19	15	4	8	24.5	21.6	3	6	X	X
5/8	2010	21°11'	157°36'	119	005	25.2	34.62	25.2	06	22	19	02	4	8	24.6	21.6	X	X	X	X
5/13	1020	20°43'	156°55'	120	034	25.7	X	25.7	24	15	X	03	1	9	26.0	20.6	8	4	X	X

Table 3.--Record of observations at bathythermograph lowerings, Charles H. Gilbert cruise 53
(Recorded on Laboratory BT and environment log. Coding of data follows U.S. Navy Hydrographic Office, 1956.)

Date, 1961	Time (LT)	Latitude N.	Longitude W.	BT slide no.	Thermocline depth (m.)	Bkt. surface temp. (°C.)	Surface salinity (°/oo)	10-meter temp. (°C.)	Wind		Barometer (mb.)	Weather	Sea	Visibility	Air temp.		Cloud		Secchi depth (m.)	Forel color
									Direction (°T.)	Speed (kn.)					Dry bulb (°C.)	Wet bulb (°C.)	Type	Amount		
6/23	2000	20°42'	157°05'	001	006	26.3	34.53	26.1	06	04	15	03	4	7	26.6	20.9	8	5	X[1/]	X
6/23	2300	20°26'	156°51'	002	019	25.4	34.64	25.4	07	08	16	00	3	7	25.3	21.2	8	4	X	X
6/24	0200	20°12'	156°35'	003	021	25.4	34.64	25.3	10	24	16	00	3	7	24.7	22.1	X	X	X	X
6/24	0500	19°56'	156°27'	004	037	24.7	34.63	24.8	09	12	14	01	3	7	25.2	21.6	8	3	X	X
6/24	0800	19°32'	156°06'	005	024	25.4	34.60	25.4	17	05	16	03	2	8	25.6	21.4	8	4	X	X
6/24	1100	19°05'	156°00'	006	018	26.4	34.51	25.9	17	05	16	03	3	7	25.6	21.4	8	6	29	1
6/24	1400	18°49'	155°51'	007	031	25.5	34.60	25.6	09	27	15	01	4	7	25.7	22.2	8	4	X	X
6/24	1700	18°30'	155°41'	X	X	25.0	34.69	X	X	X	X	X	X	X	X	X	X	X	X	X
6/24	2000	18°11'	155°32'	008	072	24.9	34.67	24.9	08	24	16	00	4	7	25.4	22.4	8	4	X	X
6/24	2300	17°52'	155°20'	009	076	24.9	34.58	24.9	07	20	17	00	4	7	25.2	21.9	X	X	X	X
6/25	0200	17°35'	155°07'	010	066	24.9	34.50	25.0	08	22	15	00	4	7	24.7	21.8	X	X	X	X
6/25	0500	17°17'	154°54'	011	052	25.2	34.65	25.1	09	24	15	03	4	7	25.0	22.2	8	4	X	X
6/25	0800	16°59'	154°42'	012	062	25.1	34.62	25.2	08	21	16	14	5	7	25.4	22.5	8	5	X	X
6/25	1100	16°39'	154°27'	013	085	24.7	34.44	25.6	08	22	16	01	5	7	25.1	22.3	8	5	X	X
6/25	1400	16°22'	154°15'	014	018	24.9	34.55	24.8	07	20	14	01	5	7	24.5	21.8	8	6	X	X
6/25	1700	16°05'	154°03'	015	073	24.9	34.55	24.8	08	24	12	01	4	7	26.7	22.5	8	6	X	X
6/25	2000	16°02'	153°43'	016	079	24.8	34.56	24.9	09	22	14	03	4	7	25.3	21.9	4	6	X	X
6/25	2300	16°04'	153°20'	017	079	25.2	34.57	24.9	09	17	15	00	3	7	24.9	21.9	X	X	X	X
6/26	0200	16°06'	152°56'	018	078	24.8	34.55	24.9	11	18	14	00	3	7	24.6	22.2	X	X	X	X
6/26	0500	16°09'	152°33'	019	006	24.8	34.54	24.6	08	22	13	03	3	7	24.4	21.7	4	6	X	X
6/26	0800	16°11'	152°10'	020	054	24.7	34.58	24.7	08	20	15	01	4	7	25.3	22.1	4	6	X	X
6/26	1100	16°13'	151°46'	021	018	25.0	34.47	24.8	09	16	15	00	5	6	25.8	22.4	8	6	X	X
6/26	1400	16°30'	151°38'	022	060	24.9	34.51	24.9	07	22	15	01	4	6	27.8	22.7	8	5	X	X
6/26	1700	16°53'	151°38'	023	064	24.8	34.51	24.7	07	22	14	03	5	7	25.2	22.2	8	5	X	X
6/26	2000	17°16'	151°38'	024	073	24.7	34.62	24.7	07	22	15	01	5	7	26.1	22.2	4	3	X	X
6/26	2300	17°42'	151°38'	025	067	24.6	34.62	24.9	05	24	16	03	4	7	25.7	22.2	X	X	X	X
6/27	0200	18°07'	151°37'	026	067	24.9	34.61	24.9	06	18	14	00	3	7	25.4	21.3	X	X	X	X
6/27	0500	18°32'	151°37'	027	049	24.8	34.63	24.9	07	22	14	03	4	7	25.6	21.8	8	4	X	X
6/27	0800	18°58'	151°36'	028	055	24.8	34.61	24.9	08	20	16	14	4	7	25.6	22.5	9	7	X	X
6/27	1100	19°23'	151°36'	029	045	24.8	34.58	24.8	05	22	17	15	4	6	26.6	22.2	8	7	X	X
6/27	1400	19°46'	151°35'	030	049	24.6	34.70	24.4	06	21	16	01	4	7	25.3	21.4	8	5	X	X
6/27	1700	20°11'	151°34'	031	037	24.6	34.85	24.7	06	20	15	03	4	7	27.8	22.8	8	4	X	X
6/27	2000	20°36'	151°33'	032	024	24.5	34.63	24.7	06	20	16	01	4	7	25.8	21.9	8	2	X	X
6/27	2300	20°57'	151°33'	033	061	24.5	34.64	24.4	06	18	17	00	4	6	25.1	21.8	8	2	X	X
6/28	0200	21°22'	151°33'	034	049	24.9	34.71	24.9	07	22	16	14	3	6	24.0	21.2	X	X	X	X
6/28	0500	21°46'	151°32'	035	031	25.0	34.76	24.9	07	21	16	03	4	7	25.6	22.2	8	5	X	X
6/28	0800	22°12'	151°32'	036	043	24.2	35.20	24.3	06	20	17	15	4	7	25.6	22.2	8	6	X	X
6/28	1100	22°38'	151°33'	037	031	24.2	35.16	24.2	05	22	18	00	4	7	23.9	21.1	6	6	X	X
6/28	1400	23°02'	151°32'	038	037	24.3	35.17	24.4	06	19	17	01	4	7	25.3	21.8	8	5	X	X
6/28	1700	23°00'	152°02'	039	046	24.4	35.06	24.3	07	20	16	03	3	7	25.8	22.5	8	6	X	X

1/ X indicates that no observation was recorded.

Table 3.--Record of observations at bathythermograph lowerings, Charles H. Gilbert cruise 53 (con.)

Date, 1961	Time (LT)	Latitude N.	Longitude W.	BT slide no.	Thermocline depth (m.)	Bkt. surface temp. (°C.)	Surface salinity (°/oo)	10-meter temp. (°C.)	Wind		Barometer (mb.)	Weather	Sea	Visibility	Air temp.		Cloud		Secchi depth (m.)	Forel color
									Direction (°T.)	Speed (kn.)					Dry bulb (°C.)	Wet bulb (°C.)	Type	Amount		
6/28	2000	23°00'	152°32'	040	043	24.7	34.70	24.5	06	23	17	14	4	7	25.0	21.7	8	6	X	X
6/28	2300	22°59'	153°02'	041	037	24.7	34.79	24.6	06	20	18	00	3	6	25.1	22.2	8	6	X	X
6/29	0200	23°22'	153°10'	042	061	24.9	34.66	24.8	07	21	17	60	4	6	24.4	21.4	X	X	X	X
6/29	0500	23°34'	153°26'	043	058	24.7	34.68	24.8	06	18	17	01	4	7	24.9	21.8	8	6	X	X
6/29	0800	23°50'	153°51'	044	054	24.7	34.86	24.6	07	20	18	01	4	7	25.1	21.7	4	5	X	X
6/29	0930	23°58'	154°04'	X	X	X	34.93	X	X	X	X	X	X	X	X	X	X	X	X	X
6/29	1100	23°46'	154°04'	045	055	24.7	34.95	24.7	08	17	19	14	4	7	25.0	21.2	8	5	X	X
6/29	1400	23°21'	154°05'	046	018	24.8	34.76	24.9	09	16	18	02	3	7	25.0	21.7	8	5	X	X
6/29	1700	22°55'	154°05'	047	024	24.7	34.72	24.8	08	18	17	01	3	7	27.5	22.9	8	4	X	X
6/29	2000	22°29'	154°05'	048	018	24.7	34.87	24.9	09	18	17	03	3	7	25.4	22.4	8	4	X	X
6/29	2300	22°18'	154°03'	049	043	24.9	34.92	25.1	11	15	17	00	3	7	25.2	22.4	8	4	X	X
6/30	0200	21°48'	154°02'	050	059	25.1	34.66	25.2	12	16	16	60	3	6	23.5	21.7	X	X	X	X
6/30	0500	21°17'	154°02'	051	055	25.2	34.65	25.1	11	17	16	14	3	7	25.0	22.8	8	5	X	X
6/30	0800	20°46'	154°01'	052	055	25.0	34.65	25.0	11	15	17	01	3	7	25.8	22.7	8	4	X	X
6/30	1100	20°15'	154°01'	053	061	25.4	34.65	25.1	14	09	17	01	3	7	25.6	22.2	8	4	X	X
6/30	1400	19°43'	154°00'	054	006	25.7	34.61	25.4	13	12	17	03	3	7	25.6	23.1	8	5	X	X
6/30	1700	19°16'	154°00'	055	012	25.5	34.63	25.4	11	14	16	01	3	7	26.4	23.3	8	2	X	X
6/30	2000	18°50'	154°00'	056	018	25.1	34.59	24.9	11	16	16	14	3	7	25.3	23.6	8	7	X	X
6/30	2300	18°25'	154°00'	057	018	25.0	34.61	25.0	12	21	17	00	3	6	25.6	23.6	8	8	X	X
7/1	0200	18°00'	154°00'	058	043	24.8	34.57	25.0	09	16	16	00	3	8	24.9	22.5	X	X	X	X
7/1	0500	17°33'	154°16'	059	098	25.1	34.58	25.1	06	16	16	03	3	7	25.0	22.8	8	7	X	X
7/1	0800	17°07'	154°32'	060	040	25.1	34.61	25.1	08	17	17	03	3	8	25.5	22.2	6	7	X	X
7/1	1100	16°40'	154°48'	061	061	25.2	34.47	25.2	08	13	16	00	3	8	26.8	24.0	6	7	X	X
7/1	1400	16°21'	155°00'	062	018	25.3	34.56	25.4	08	16	16	01	3	8	26.0	23.6	8	8	X	X
7/1	1700	16°12'	155°25'	063	017	25.6	34.64	25.6	07	16	15	14	3	8	26.2	23.9	8	7	X	X
7/1	2000	16°14'	155°56'	064	012	25.5	34.68	25.6	07	20	16	14	3	7	26.7	23.4	8	7	X	X
7/1	2300	16°17'	156°22'	065	043	25.6	34.62	25.6	04	17	17	21	3	6	26.6	24.1	6	6	X	X
7/2	0200	16°19'	156°54'	066	061	25.4	34.65	25.3	06	18	16	00	3	7	25.6	23.3	X	X	X	X
7/2	0500	16°43'	157°06'	067	031	25.5	34.78	25.4	07	19	15	01	3	7	26.7	23.5	8	4	X	X
7/2	0800	17°12'	157°11'	068	031	25.4	34.70	25.3	09	17	15	00	3	7	26.3	23.3	8	4	X	X
7/2	1100	17°42'	157°17'	069	116	25.3	34.70	25.3	05	15	16	00	3	7	26.6	24.1	8	3	X	X
7/2	1400	18°03'	157°21'	070	012	25.4	34.63	25.3	08	22	15	01	3	7	26.6	23.4	8	2	X	X
7/2	1700	18°32'	157°26'	071	006	26.1	34.62	25.8	09	12	15	03	3	7	26.4	23.3	8	6	X	X
7/2	2000	19°00'	157°31'	072	006	26.0	34.57	25.7	11	11	16	03	2	7	26.6	23.3	8	6	X	X
7/2	2300	19°29'	157°35'	073	031	26.0	34.63	26.1	08	10	17	00	2	7	26.2	23.3	8	5	X	X
7/3	0200	19°59'	157°39'	074	037	26.3	34.66	26.4	09	14	16	00	2	7	25.8	22.8	X	X	X	X
7/3	0500	20°23'	157°43'	075	031	26.3	34.64	26.3	10	13	15	01	3	7	27.2	23.3	8	6	X	X
7/3	0800	20°47'	157°48'	X	X	25.9	34.62	X	X	X	X	X	X	X	X	X	X	X	X	X
7/7	2000	20°52'	158°05'	076	024	26.4	34.60	26.5	06	20	17	01	2	7	25.8	22.7	8	2	X	X
7/7	2300	20°27'	158°13'	077	012	26.3	34.64	26.5	09	07	18	01	2	7	25.8	22.2	X	X	X	X

Table 3.--Record of observations at bathythermograph lowerings, Charles H. Gilbert cruise 53 (con.)

Date, 1961	Time (LT)	Latitude N.	Longitude W.	BT slide no.	Thermocline depth (m.)	Bkt. surface temp. (°C.)	Surface salinity (°/oo)	10-meter temp. (°C.)	Wind		Barometer (mb.)	Weather	Sea	Visibility	Air temp.		Cloud		Secchi depth (m.)	Forel color
									Direction (°T.)	Speed (kn.)					Dry bulb (°C.)	Wet bulb (°C.)	Type	Amount		
7/8	0200	20°02'	158°27'	078	012	26.3	34.58	26.4	10	11	16	01	2	6	25.4	22.9	8	5	X	X
7/8	0500	19°37'	158°30'	079	031	25.9	34.67	25.9	13	06	16	00	2	7	25.0	22.4	X	X	X	X
7/8	0800	19°11'	158°38'	080	018	25.7	34.66	25.7	14	12	17	01	2	7	25.6	22.4	8	3	X	X
7/8	1100	18°45'	158°46'	081	012	26.0	34.68	25.9	12	14	17	03	2	7	27.8	23.2	1	4	X	X
7/8	1400	18°28'	158°53'	082	009	26.1	34.67	26.1	29	15	16	02	2	7	27.2	23.1	1	2	X	X
7/8	1700	18°04'	159°01'	083	015	26.1	34.80	26.0	09	13	15	01	2	7	26.1	22.7	8	3	X	X
7/8	2000	17°40'	159°10'	084	018	25.8	34.63	25.8	08	16	15	03	2	7	26.0	23.2	8	4	X	X
7/8	2300	17°21'	159°16'	085	061	25.7	34.58	25.6	10	19	16	03	2	7	25.9	23.3	8	4	X	X
7/9	0200	16°57'	159°26'	086	061	25.7	34.58	25.8	11	16	15	00	2	7	26.3	23.9	1	0	X	X
7/9	0500	16°34'	159°35'	087	091	25.6	34.60	25.8	08	18	15	62	2	6	24.6	23.3	X	X	X	X
7/9	0800	16°10'	159°37'	088	060	25.7	34.53	25.7	07	18	16	21	3	6	26.1	23.9	8	5	X	X
7/9	1100	16°01'	159°55'	089	055	25.8	34.54	25.6	09	19	16	03	3	7	27.3	24.4	8	6	X	X
7/9	1400	16°05'	160°20'	090	018	25.8	34.56	25.8	09	16	15	02	3	7	27.3	24.4	4	4	X	X
7/9	1700	16°10'	160°48'	091	024	25.9	34.57	25.9	10	15	14	01	3	7	28.1	24.7	8	3	X	X
7/9	2000	16°07'	161°18'	092	058	25.7	34.57	25.7	10	16	15	03	3	7	26.1	23.7	8	7	X	X
7/9	2300	16°04'	161°48'	093	049	25.8	34.58	25.9	10	16	17	03	3	7	26.4	24.2	8	6	X	X
7/10	0200	16°00'	162°18'	094	037	25.8	34.61	25.9	12	15	16	00	3	7	25.9	23.8	2	3	X	X
7/10	0500	15°58'	162°41'	095	079	26.0	34.60	26.1	13	12	15	00	3	7	25.8	23.3	X	X	X	X
7/10	0800	15°54'	163°11'	096	080	26.2	34.63	26.2	09	17	16	01	3	7	27.2	24.1	8	3	X	X
7/10	1100	15°57'	163°37'	097	079	26.2	34.62	26.1	06	18	16	03	3	7	26.8	23.9	8	6	X	X
7/10	1400	15°59'	164°00'	098	023	26.4	34.61	26.3	09	19	15	02	3	7	28.2	24.0	8	6	X	X
7/10	1700	16°01'	164°30'	099	031	26.6	34.63	26.5	09	17	14	01	3	7	26.9	23.1	8	4	X	X
7/10	2000	16°23'	164°32'	100	031	26.6	34.62	26.6	09	14	14	03	2	7	26.7	23.9	8	6	X	X
7/10	2300	16°51'	164°33'	101	061	26.2	34.61	26.2	09	13	16	03	2	7	26.6	23.3	8	6	X	X
7/11	0200	17°19'	164°36'	102	043	26.2	34.61	26.2	09	11	15	02	2	7	27.0	23.4	8	3	X	X
7/11	0530	17°46'	164°39'	103	031	26.2	34.55	26.2	07	07	15	00	2	7	26.1	22.9	X	X	X	X
7/11	0800	18°13'	164°41'	104	055	26.2	34.59	26.2	07	07	15	03	2	7	26.1	23.1	8	6	X	X
7/11	1100	18°43'	164°43'	105	031	26.5	34.61	26.3	08	11	16	03	2	7	27.2	23.9	8	3	X	X
7/11	1400	19°06'	164°43'	106	043	26.4	34.58	26.4	05	08	15	03	2	7	27.2	24.1	8	6	X	X
7/11	1700	19°31'	164°48'	107	006	26.9	34.73	27.1	09	15	14	03	2	7	26.7	23.4	8	7	X	X
7/11	2000	19°58'	164°49'	108	031	26.7	34.69	26.6	09	13	15	01	2	7	26.5	23.1	8	5	X	X
7/11	2300	20°24'	164°50'	109	037	26.9	34.69	26.9	07	16	16	03	2	7	26.6	22.8	X	X	X	X
7/12	0140	20°55'	164°48'	110	018	26.9	34.88	26.9	07	18	16	00	3	6	26.0	26.9	1	2	X	X
7/12	0400	21°12'	164°44'	111	024	26.5	34.89	26.5	07	16	15	00	3	6	26.1	23.1	X	X	X	X
7/12	0700	21°41'	164°40'	112	027	26.2	35.06	26.1	08	18	16	01	3	6	26.2	23.1	8	2	X	X
7/12	1000	22°07'	164°37'	113	031	26.2	35.05	26.2	09	14	17	03	3	7	26.2	23.1	8	3	X	X
7/12	1300	22°29'	164°36'	114	006	26.5	35.07	26.3	06	18	17	02	3	7	29.0	23.6	8	3	X	X
7/12	1600	22°53'	164°35'	115	019	26.2	34.91	26.2	09	16	16	21	3	7	25.9	22.7	8	6	X	X
7/12	1900	23°17'	164°36'	X	X	26.2	34.90	X	X	X	X	X	X	X	X	X	X	X	X	X
7/12	2200	23°41'	164°37'	X	X	26.1	34.88	X	X	X	X	X	X	X	X	X	X	X	X	X

Table 3.--Record of observations at bathythermograph lowerings, Charles H. Gilbert cruise 53 (con.)

Date, 1961	Time (LT)	Latitude N.	Longitude W.	BT slide no.	Thermocline depth (m.)	Bkt. surface temp. (°C.)	Surface salinity (°/oo)	10-meter temp. (°C.)	Wind		Barometer (mb.)	Weather	Sea	Visibility	Air temp.		Cloud		Secchi depth (m.)	Forel color
									Direction (°T.)	Speed (kn.)					Dry bulb (°C.)	Wet bulb (°C.)	Type	Amount		
7/13	0100	24°02'	164°44'	116	015	26.1	34.88	26.1	09	10	19	00	2	6	26.6	23.0	8	2	X	X
7/13	0400	24°06'	165°16'	117	024	26.0	35.04	26.0	07	12	18	00	2	6	25.8	22.5	X	X	X	X
7/13	0700	24°09'	165°49'	118	024	26.4	35.08	26.3	08	13	19	01	2	7	26.9	22.7	8	4	X	X
7/13	1000	23°55'	166°10'	X	X	26.0	34.99	X	X	X	X	X	X	X	X	X	X	X	X	X
7/14	1000	23°52'	166°33'	119	031	26.7	34.87	26.6	09	15	18	16	2	7	27.2	22.8	8	5	X	X
7/14	1300	23°53'	166°58'	120	021	26.6	34.93	26.6	08	19	19	00	3	7	26.8	22.4	8	2	X	X
7/14	1600	23°56'	167°26'	121	018	26.6	34.90	26.6	09	16	17	01	3	7	26.1	22.5	8	3	X	X
7/14	1900	23°56'	167°50'	122	018	26.3	35.05	26.3	07	17	17	01	2	7	27.2	23.3	8	4	X	X
7/14	2200	23°55'	168°21'	123	012	26.2	35.05	26.1	08	19	19	00	2	7	25.9	22.7	X	X	X	X
7/15	0100	23°53'	168°57'	124	012	26.3	35.12	26.4	07	12	18	00	2	6	26.8	22.9	X	0	X	X
7/15	0400	23°54'	169°15'	125	018	26.3	35.00	26.3	06	07	17	00	2	6	26.8	23.6	8	2	X	X
7/15	0700	23°28'	169°21'	126	018	26.2	34.98	26.1	06	13	17	01	2	6	26.0	23.2	8	2	X	X
7/15	1000	22°58'	169°21'	127	037	26.5	34.97	26.6	09	14	17	01	2	7	26.2	22.9	8	3	X	X
7/15	1300	22°35'	169°25'	128	018	26.8	34.90	26.8	16	03	17	21	3	6	25.7	23.3	8	2	X	X
7/15	1600	22°08'	169°25'	129	024	27.0	34.85	26.9	07	19	16	02	3	7	26.7	23.8	8	3	X	X
7/15	1900	21°42'	169°28'	130	038	26.6	34.77	26.7	06	18	15	01	3	7	26.6	23.9	8	3	X	X
7/15	2200	21°22'	169°30'	131	037	27.0	34.86	27.1	08	18	17	00	3	7	26.7	23.6	X	X	X	X
7/16	0100	20°58'	169°32'	132	037	26.8	34.94	26.9	10	18	15	00	3	6	26.8	23.9	X	X	X	X
7/16	0400	20°33'	169°35'	133	037	26.8	35.03	26.6	09	15	15	00	3	6	26.7	23.9	X	X	X	X
7/16	0700	20°07'	169°38'	134	031	26.6	34.98	26.6	09	15	15	00	3	7	27.2	23.6	8	4	X	X
7/16	1000	19°42'	169°41'	135	049	26.9	34.84	27.0	08	17	16	18	3	7	27.9	23.8	8	4	X	X
7/16	1300	19°21'	169°40'	136	006	27.0	34.78	27.0	14	15	15	21	3	6	27.0	24.1	8	7	X	X
7/16	1600	18°59'	169°39'	137	024	27.1	34.76	27.1	08	18	13	01	3	7	27.1	23.7	8	3	X	X
7/16	1900	18°38'	169°35'	138	049	26.9	34.68	27.2	09	21	13	03	3	7	26.9	24.3	8	5	X	X
7/16	2200	18°12'	169°33'	139	073	26.8	34.66	26.8	09	21	14	00	3	7	26.7	23.3	X	X	X	X
7/17	0100	17°46'	169°31'	140	061	26.9	34.71	27.0	13	28	14	00	3	7	27.1	23.8	8	5	X	X
7/17	0400	17°25'	169°30'	141	079	26.8	34.70	26.9	08	17	13	00	3	6	26.7	23.4	X	X	X	X
7/19	1600	16°18'	169°32'	142	012	26.9	34.62	27.0	09	14	10	03	3	7	27.1	23.9	8	7	X	X
7/19	1900	16°02'	169°25'	143	018	26.8	34.67	26.8	09	13	12	00	3	7	26.9	23.3	8	3	X	X
7/19	2200	16°03'	169°05'	144	024	26.6	34.63	26.6	09	13	13	00	3	6	26.9	23.6	X	X	X	X
7/20	0100	16°03'	168°41'	145	021	26.8	34.67	26.7	09	15	12	00	3	7	26.6	22.8	0	0	X	X
7/20	0400	16°03'	168°15'	146	104	26.5	34.65	26.7	09	12	11	00	3	6	26.2	22.9	0	0	X	X
7/20	0700	16°03'	167°52'	147	031	26.8	34.63	26.9	09	17	12	03	3	7	26.8	26.8	8	4	X	X
7/20	1000	16°02'	167°26'	148	085	26.6	34.56	26.6	09	13	14	03	3	7	26.9	23.3	8	6	X	X
7/20	1300	16°02'	167°06'	149	031	26.8	34.63	26.6	10	13	13	01	3	7	27.7	23.8	1	7	X	X
7/20	1600	16°25'	167°03'	150	031	26.7	34.65	26.6	09	17	12	03	3	7	27.1	23.6	8	9	X	X
7/20	1900	16°53'	167°09'	151	006	26.8	34.68	26.8	09	16	13	03	3	7	26.7	23.6	8,1	7	X	X
7/20	2200	17°20'	167°12'	152	061	26.9	34.63	27.1	09	16	15	00	3	7	26.5	23.2	X	X	X	X
7/21	0100	17°46'	167°11'	153	037	27.0	34.64	27.1	09	18	15	00	3	7	26.6	22.7	X	X	X	X
7/21	0400	18°08'	167°10'	154	031	26.8	34.70	27.1	09	14	15	01	3	6	26.3	23.2	X	X	X	X

Table 3.--Record of observations at bathythermograph lowerings, Charles H. Gilbert cruise 53 (con.)

Date, 1961	Time (LT)	Latitude N.	Longitude W.	BT slide no.	Thermocline depth (m.)	Bkt. surface temp. (°C.)	Surface salinity (°/oo)	10-meter temp. (°C.)	Wind		Barometer (mb.)	Weather	Sea	Visibility	Air temp.		Cloud		Secchi depth (m.)	Forel color
									Direction (°T.)	Speed (kn.)					Dry bulb (°C.)	Wet bulb (°C.)	Type	Amount		
7/21	0700	18°35'	167°09'	155	061	26.9	34.68	26.8	06	14	16	03	3	7	26.7	23.8	3,6	9	X	X
7/21	1000	19°00'	167°08'	156	034	26.9	34.76	26.9	09	14	17	03	3	7	26.7	23.2	8,2	6	X	X
7/21	1300	19°23'	167°07'	157	031	27.1	34.74	27.0	07	15	16	01	3	7	26.9	23.3	1,2	6	X	X
7/21	1600	19°48'	167°05'	158	018	27.0	34.79	27.1	07	17	15	01	3	7	28.4	24.2	6,8	7	X	X
7/21	1900	20°16'	167°06'	159	027	26.8	34.94	26.7	06	16	16	03	3	7	26.6	23.3	1,8	7	X	X
7/21	2200	20°40'	167°07'	160	040	26.9	34.88	26.8	07	14	17	18	3	7	26.3	23.1	X	X	X	X
7/22	0100	21°07'	167°08'	161	049	26.5	34.96	26.5	09	15	17	00	3	7	26.3	23.5	X	X	X	X
7/22	0400	21°34'	167°08'	162	043	26.5	34.98	26.6	07	18	16	00	3	6	26.6	23.2	X	X	X	X
7/22	0700	22°01'	167°08'	163	038	26.4	35.00	26.6	07	14	17	02	3	7	26.6	23.1	8	7	X	X
7/22	1000	22°29'	167°05'	164	055	26.5	35.00	26.4	09	11	17	01	2	7	27.0	23.1	8	7	X	X
7/22	1300	22°51'	167°02'	165	037	26.7	34.96	26.3	07	13	17	01	2	7	26.1	22.8	8,9	4	X	X
7/22	1600	23°05'	166°37'	166	006	26.7	35.00	26.3	09	10	16	01	2	7	26.1	22.2	8	3	X	X
7/22	1900	23°19'	166°11'	167	006	26.6	35.04	26.6	09	11	17	01	2	7	25.8	22.3	8	3	X	X
7/22	2200	23°31'	165°47'	168	012	26.3	35.06	26.4	09	13	17	00	2	7	25.8	21.7	X	X	X	X
7/23	0100	23°42'	165°24'	169	024	26.1	35.00	26.1	09	12	17	00	2	7	25.8	21.8	X	X	X	X
7/23	0400	23°52'	165°04'	170	031	26.0	34.95	26.0	08	18	16	01	3	7	25.4	22.0	8	2	X	X
7/23	0700	23°58'	164°38'	171	052	26.0	35.00	26.0	06	10	17	03	2	7	26.6	22.7	8	3	X	X
7/23	1000	23°59'	164°07'	172	050	26.1	35.05	26.1	12	10	18	01	2	8	26.7	22.5	8	2	X	X
7/23	1300	24°01'	163°42'	173	006	26.8	34.91	26.3	09	10	17	01	2	8	26.5	22.5	8	4	X	X
7/23	1700	24°02'	163°17'	174	003	26.6	34.87	26.2	09	08	16	00	2	8	26.5	22.1	8	3	X	X
7/23	2000	24°04'	162°50'	175	006	26.5	34.94	00.6	12	08	17	01	2	8	25.7	22.2	8	3	X	X
7/23	2300	24°04'	162°26'	176	012	26.0	34.88	26.1	09	08	18	52	2	8	25.6	22.5	X	X	X	X
7/24	0200	23°55'	162°02'	177	024	26.0	34.83	25.9	10	13	17	01	2	7	25.7	22.8	X	X	X	X
7/24	0500	23°26'	162°07'	178	024	25.9	34.90	25.9	09	13	16	01	2	7	25.3	21.9	8	2	X	X
7/24	0800	22°59'	162°05'	X	X	26.2	34.82	X	11	16	17	03	2	7	25.6	22.5	8	5	X	X
7/24	1100	22°33'	162°04'	179	049	26.4	34.83	26.3	09	16	17	01	2	7	25.8	22.5	8	3	X	X
7/24	1400	22°12'	162°08'	180	006	26.4	34.87	26.5	09	15	17	01	2	7	26.4	23.3	8	5	X	X
7/24	1700	21°46'	162°10'	181	009	26.7	34.86	26.8	08	14	15	02	2	7	25.7	22.2	8	5	X	X
7/24	2000	21°20'	162°13'	182	012	26.7	34.32	27.1	09	14	15	01	2	7	26.1	22.8	8	4	X	X
7/24	2300	20°53'	162°14'	183	043	26.7	34.65	26.7	10	12	16	03	2	7	26.1	23.2	8	5	X	X
7/25	0200	20°25'	162°15'	184	012	26.9	34.84	26.6	11	11	15	01	2	7	26.2	23.3	8,1	3	X	X
7/25	0500	20°03'	162°12'	185	031	26.6	34.57	26.6	11	14	14	01	2	7	25.6	22.4	8	2	X	X
7/25	0800	19°32'	162°09'	186	061	26.6	34.70	26.6	10	11	15	01	2	7	25.8	22.5	8	2	X	X
7/25	1100	19°02'	162°07'	187	006	27.0	34.73	26.8	11	12	15	02	2	7	28.1	23.6	8	2	X	X
7/25	1400	18°40'	162°06'	188	009	27.0	34.69	26.8	10	16	14	16	2	7	25.8	23.3	8	6	X	X
7/25	1700	18°05'	162°00'	189	012	26.9	34.64	26.9	09	11	12	03	3	7	26.5	22.3	8	4	X	X
7/25	2000	17°39'	161°57'	190	037	26.0	34.61	26.9	09	14	14	02	3	7	25.8	22.7	8	4	X	X
7/25	2300	17°12'	161°54'	191	031	26.1	34.66	26.7	09	13	15	00	2	7	26.0	23.3	X	X	X	X
7/26	0200	17°00'	161°39'	192	055	26.5	34.65	26.6	09	10	14	01	3	7	26.1	22.7	X	X	X	X
7/26	0500	17°00'	161°11'	193	037	26.0	34.67	26.2	09	13	12	01	3	7	25.7	22.5	8	3	X	X

Table 3.--Record of observations at bathythermograph lowerings, Charles H. Gilbert cruise 53 (con.)

Date, 1961	Time (LT)	Latitude N.	Longitude W.	BT slide no.	Thermocline depth (m.)	Bkt. surface temp. (°C.)	Surface salinity (°/oo)	10-meter temp. (°C.)	Wind		Barometer (mb.)	Weather	Sea	Visibility	Air temp.		Cloud		Secchi depth (m.)	Forel color
									Direction (°T.)	Speed (kn.)					Dry bulb (°C.)	Wet bulb (°C.)	Type	Amount		
7/26	0800	17°00'	160°45'	194	049	26.1	34.65	25.9	11	14	15	00	3	7	25.8	22.5	8	4	X	X
7/26	1100	16°59'	160°20'	195	012	26.0	34.58	26.0	11	11	15	01	3	7	25.8	21.8	8	2	X	X
7/26	1400	16°59'	160°00'	196	006	26.3	34.66	26.1	08	13	14	03	2	7	27.1	23.2	8	4	X	X
7/26	1700	17°27'	160°00'	197	009	26.4	34.67	26.3	09	16	13	01	2	7	27.1	22.9	8	2	X	X
7/26	2000	17°57'	160°00'	198	018	26.2	34.82	26.2	07	15	15	02	2	7	25.8	22.7	8	2	X	X
7/26	2300	18°27'	160°00'	199	015	26.0	34.68	26.2	09	17	16	02	2	7	26.0	23.1	8	2	X	X
7/27	0200	18°57'	159°59'	200	031	26.3	34.67	26.1	08	13	15	01	2	7	26.7	23.7	8	4	X	X
7/27	0500	19°22'	159°59'	201	027	26.3	34.67	25.6	08	13	15	01	2	7	26.3	23.0	8	2	X	X
7/27	0800	19°49'	159°56'	202	026	26.6	34.58	26.9	08	11	16	03	2	7	26.0	22.7	8	4	X	X
7/27	1100	20°16'	159°53'	203	059	26.6	34.57	26.7	09	13	16	14	3	7	26.7	23.3	8	4	X	X
7/27	1400	20°42'	159°53'	204	012	26.6	34.82	26.6	09	11	16	01	2	7	26.7	23.2	8	4	X	X
7/27	1700	21°11'	159°54'	205	006	26.8	34.85	26.6	08	11	15	03	2	7	26.8	22.9	8	3	X	X
7/27	2000	21°41'	159°54'	206	037	26.5	34.65	26.4	08	21	16	14	3	7	26.1	23.2	8	4	X	X
7/27	2300	22°06'	159°55'	207	024	26.4	34.66	26.4	08	06	17	03	2	7	26.4	22.4	8	5	X	X
7/28	0500	22°43'	159°49'	208	037	26.1	34.69	26.1	08	19	17	02	3	7	25.7	22.8	3,8	7	X	X
7/28	0800	23°10'	159°49'	209	043	25.8	34.82	25.6	08	18	18	03	3	7	25.8	22.4	1,8	7	X	X
7/28	1100	23°38'	159°44'	210	031	26.2	34.66	26.1	07	19	19	01	3	7	25.7	22.1	1,8	3	X	X
7/28	1400	24°01'	159°37'	211	031	26.2	34.72	26.2	08	17	18	01	3	7	26.1	22.2	1,8	7	X	X
7/28	1700	24°03'	159°08'	212	044	25.7	34.84	25.7	09	12	18	01	3	7	25.2	22.3	4,8	6	X	X
7/28	2000	24°05'	158°35'	213	037	25.7	34.82	25.9	09	18	18	03	4	7	26.1	22.1	1,8	7	X	X
7/28	2300	24°06'	158°09'	214	043	25.6	34.77	25.8	07	14	19	14	4	6	24.7	21.9	X	X	X	X
7/29	0200	24°04'	157°43'	215	018	25.9	34.76	26.0	09	12	17	14	3	7	25.0	23.0	3,8	7	X	X
7/29	0500	24°03'	157°20'	216	003	25.5	34.61	25.6	09	26	13	02	3	7	25.0	22.5	3,8	7	X	X
7/29	0800	24°02'	156°57'	217	055	25.7	34.89	25.7	09	16	17	03	3	7	25.0	22.2	3,8	7	X	X
7/29	1100	23°40'	157°06'	218	058	25.6	34.92	25.6	10	14	17	21	3	7	24.4	21.8	1,8	5	X	X
7/29	1400	23°25'	157°17'	219	061	25.8	34.92	25.8	09	16	16	03	3	7	25.6	22.8	1,8	7	X	X
7/29	1700	23°03'	157°23'	220	053	25.7	34.79	25.7	09	15	16	02	3	7	25.2	22.4	3,8	5	X	X
7/29	2000	22°40'	157°32'	221	050	25.7	34.89	26.5	09	14	16	03	3	7	25.6	22.2	1,8	X	X	X
7/29	2300	22°23'	157°40'	X	X	25.7	34.89	X	X	X	X	X	X	X	X	X	X	X	X	X
7/30	0200	22°01'	157°40'	X	X	25.7	34.88	X	X	X	X	X	X	X	X	X	X	X	X	X
7/30	0500	21°39'	157°38'	X	X	25.7	34.86	X	X	X	X	X	X	X	X	X	X	X	X	X

Table 4.-- Record of weather observations (USWB 1210-F and 615-5), Charles H. Gilbert cruise 51[1/]

Date, 1961	Latitude N.	Longitude W.	Time (GCT)	Visibility	Wind		Weather		Pressure			Temperature (° F.)			Clouds						Waves		
					Direction	Speed (kn.)	Present	Past	Bar. corr. (mb.)	Characteristic	Amt. change	Dry bulb	Wet bulb	Sea water	Total amount	Amount low	Type low	Height low	Type middle	Type high	Direction	Period	Height
1/19	20.9°	157.6°	0000	98	20	12	03	1	1006.4	8	2.5	77.0	70.3	77.2	3	3	8	4	0	0	18	3	2
1/19	20.1°	157.2°	0600	98	23	14	00	0	1009.1	2	1.5	76.8	70.3	76.6	1	2	8	4	0	0	18	3	2
1/19	19.3°	156.5°	1200	98	26	10	00	0	1008.8	6	0.5	75.7	70.8	76.5	9	X	X	X	X	X	XX	X	X
1/19	18.7°	156.0°	1800	98	27	13	03	0	1010.2	1	2.0	76.2	71.6	76.6	6	5	2	4	6	6	27	3	2
1/20	18.0°	155.4°	0000	98	27	17	03	2	1008.8	6	2.0	79.0	73.4	76.5	7	3	1	4	7	8	27	3	2
1/20	17.3°	154.8°	0600	98	26	13	02	2	1010.5	1	2.0	76.5	73.2	76.3	X	X	X	X	X	X	27	3	2
1/20	16.5°	154.1°	1200	98	25	11	00	X	1011.5	4	0.0	75.2	72.6	76.3	X	X	X	X	X	X	XX	X	X
1/20	16.0°	153.8°	1800	98	18	08	02	2	1013.5	2	2.0	74.0	71.0	76.5	7	4	3	2	9	8	33	3	2
1/21	15.9°	152.7°	0000	99	17	05	01	1	1010.8	7	2.5	76.0	71.2	78.1	1	1	2	4	4	0	34	5	4
1/21	16.0°	151.9°	0600	98	04	08	00	1	1012.9	3	3.0	76.8	71.2	77.4	X	X	X	X	X	X	34	4	3
1/21	16.1°	151.5°	1200	98	15	11	02	X	1015.6	7	1.5	75.8	71.2	76.8	X	X	X	X	X	X	XX	X	X
1/21	17.2°	151.6°	1800	99	12	10	02	0	1014.6	2	2.0	78.3	72.5	75.7	4	3	8	4	6	0	01	3	3
1/22	18.1°	151.6°	0000	99	07	07	03	2	1012.2	6	2.0	75.8	70.6	77.0	6	6	2	4	0	0	36	3	3
1/22	18.8°	151.7°	0600	98	05	12	00	0	1014.2	1	2.0	75.0	69.9	75.6	X	X	X	X	X	X	36	3	3
1/22	19.4°	151.7°	1200	98	09	11	00	0	1012.9	7	1.0	73.6	68.4	76.1	X	X	X	X	X	X	XX	X	X
1/22	20.3°	151.7°	1800	99	12	05	00	0	1015.2	2	2.0	75.3	68.8	75.2	4	4	2	4	0	0	35	3	2
1/23	21.2°	151.6°	0000	99	19	06	01	0	1011.9	7	2.7	74.0	67.9	76.5	1	1	1	4	0	0	34	3	2
1/23	22.1°	151.4°	0600	98	22	13	00	0	1013.5	2	2.5	74.9	69.3	73.9	X	X	X	X	X	X	34	3	3
1/23	22.7°	151.4°	1200	98	24	14	00	X	1011.2	6	1.9	73.1	69.1	73.4	X	X	X	X	X	X	XX	X	X
1/23	23.5°	151.2°	1800	98	24	19	00	X	1011.9	4	0.0	73.8	70.3	73.9	6	4	7	4	6	0	29	2	3

1/ All columns in USWB 1210-F and 615-5 are not included here. Those deleted are:

Column	2	Day of week
"	3	Octant
"	13	Barometer as read
"	14	Barometer as corrected
"	17	Air temperature, °F.
"	23	Course of ship
"	24	Speed of ship
"	31	Diff. sea-air, °F.
"	32	Dew point, °F.

Table 4.--Record of weather observations (USWB 1210-F and 615-5), Charles H. Gilbert cruise 51 (con.)

Date, 1961	Latitude N.	Longitude W.	Time (GCT)	Visibility	Wind		Weather		Pressure			Temperature (° F.)			Clouds						Waves		
					Direction	Speed (kn.)	Present	Past	Bar. corr. (mb.)	Characteristic	Amt. change	Dry bulb	Wet bulb	Sea water	Total amount	Amount low	Type low	Height low	Type middle	Type high	Direction	Period	Height
1/24	23.8°	151.8°	0000	98	32	19	01	1	1012.2	7	0.9	70.6	61.8	73.4	4	3	8	4	6	0	30	3	3
1/24	23.8°	152.5°	0600	98	33	25	00	1	1015.6	3	4.0	71.5	63.2	73.4	5	5	1	5	0	0	30	2	4
1/24	23.9°	153.2°	1200	98	01	14	00	X	1015.6	4	0.0	65.4	57.2	72.0	X	X	X	X	X	X	34	3	4
1/24	24.0°	154.0°	1800	99	01	10	03	1	1017.6	2	2.0	66.0	58.3	72.0	6	3	1	5	4	0	28	3	3
1/25	23.4°	152.2°	0000	99	10	14	03	2	1013.9	6	3.0	68.4	61.4	74.5	7	7	8	4	0	0	13	3	3
1/25	22.6°	154.1°	0600	98	13	19	00	2	1015.6	2	1.0	72.1	65.2	74.7	6	6	1	5	0	0	15	2	3
1/25	21.7°	154.1°	1200	98	15	23	01	1	1014.6	7	1.0	73.5	66.4	74.8	3	3	2	X	0	0	15	2	4
1/25	20.8°	154.2°	1800	99	14	18	00	1	1014.9	3	2.0	77.3	71.0	75.2	5	5	2	4	0	0	12	2	3
1/26	20.0°	154.2°	0000	98	19	16	25	8	1012.2	7	2.0	76.0	71.4	75.6	8	8	8	4	0	0	18	2	3
1/26	19.2°	154.2°	0600	98	18	14	00	2	1013.2	3	2.0	76.5	72.2	76.3	8	8	8	4	0	0	18	2	2
1/26	18.2°	154.2°	1200	98	22	13	01	2	1012.9	8	0.7	76.0	72.4	76.3	5	3	2	X	0	0	18	2	2
1/26	17.6°	154.1°	1800	99	18	10	01	0	1013.9	2	2.0	76.3	71.8	76.3	3	3	9	4	0	0	18	2	1
1/27	16.7°	154.2°	0000	98	22	08	01	0	1011.9	7	2.2	77.4	73.1	77.4	1	1	3	X	0	0	16	2	2
1/27	16.0°	154.5°	0600	98	20	09	02	0	1013.9	2	1.5	79.0	73.2	77.4	1	0	0	9	0	0	16	2	2
1/27	16.1°	155.5°	1200	98	27	06	03	0	1014.2	0	0.2	76.8	72.4	77.4	3	3	2	X	0	0	XX	X	X
1/27	16.0°	156.4°	1800	99	35	06	00	0	1014.9	2	2.0	76.5	71.5	77.5	2	2	2	4	0	0	30	2	1
1/28	16.2°	157.0°	0000	99	05	06	01	0	1013.2	7	2.0	77.5	70.4	79.6	1	1	2	4	0	0	31	2	2
1/28	17.2°	157.3°	0600	99	05	06	02	0	1014.9	2	1.0	77.5	69.5	77.7	1	1	2	5	0	0	31	2	2
1/28	18.1°	157.2°	1200	99	04	08	02	0	1015.9	2	0.9	75.1	68.0	77.2	1	1	2	X	0	0	32	2	2
1/28	19.0°	157.4°	1800	99	06	05	00	0	1016.6	2	1.0	75.5	66.8	76.5	3	3	8	5	0	0	31	2	2
1/29	19.8°	157.6°	0000	99	00	00	02	0	1015.6	7	1.5	75.6	66.0	78.6	3	3	1	5	0	0	32	3	3
1/29	20.7°	157.7°	0600	98	07	05	02	0	1016.9	2	2.0	75.2	65.0	75.6	1	1	1	4	0	0	32	2	2
2/2	20.5°	158.2°	0000	98	07	15	02	2	1016.6	7	3.0	77.3	68.9	75.6	7	6	8	4	6	0	09	2	2
2/2	19.5°	158.4°	0600	98	09	12	60	2	1018.6	1	2.0	76.9	72.2	76.6	9	X	X	0	X	X	09	2	2
2/2	18.6°	158.7°	1200	98	14	09	00	X	1018.6	6	1.0	77.3	72.5	77.2	3	0	0	9	6	0	09	2	2
2/2	18.0°	158.8°	1800	98	17	10	00	1	1018.6	4	0.0	78.0	73.5	78.4	4	2	2	4	6	0	09	2	2
2/3	17.1°	159.3°	0000	98	14	05	02	0	1016.6	8	3.0	80.0	73.0	78.9	1	1	8	5	6	0	14	3	3
2/3	16.4°	159.4°	0600	98	32	15	00	0	1017.6	2	2.0	78.3	72.8	78.4	9	X	X	0	X	X	14	3	3
2/3	16.0°	160.0°	1200	98	06	15	00	0	1016.3	7	2.0	78.5	73.0	78.6	1	1	1	4	0	0	09	2	2
2/3	16.1°	160.4°	1800	98	07	13	03	0	1015.6	3	0.7	77.8	72.7	78.0	2	2	2	4	0	0	08	2	2
2/4	16.1°	161.7°	0000	98	07	09	03	2	1014.6	7	1.5	83.3	74.3	78.3	5	5	1	4	0	0	10	2	2
2/4	16.4°	162.5°	0600	98	09	14	00	0	1015.9	2	1.0	78.2	73.1	77.9	2	2	1	4	0	0	14	2	2
2/4	17.3°	162.5°	1200	98	10	08	00	0	1015.9	7	1.0	78.5	73.0	77.4	3	3	1	4	0	0	14	2	2
2/4	18.1°	162.5°	1800	98	09	08	02	0	1016.9	2	1.2	76.2	71.7	77.6	3	3	1	4	0	0	15	2	2
2/5	18.9°	162.5°	0000	98	10	09	01	2	1015.6	7	2.0	77.5	72.5	78.3	4	4	1	4	0	0	10	2	2

Table 4.--Record of weather observations (USWB 1210-F and 615-5), Charles H. Gilbert cruise 51 (con.)

Date, 1961	Latitude N.	Longitude W.	Time (GCT)	Visibility	Wind		Weather		Pressure			Temperature (° F.)			Clouds						Waves		
					Direction	Speed (kn.)	Present	Past	Bar. corr. (mb.)	Characteristic	Amt. change	Dry bulb	Wet bulb	Sea water	Total amount	Amount low	Type low	Height low	Type middle	Type high	Direction	Period	Height
2/5	19.8°	162.5°	0600	98	11	10	00	0	1016.9	2	1.0	77.3	72.3	77.9	2	2	2	4	0	0	14	2	2
2/5	20.7°	162.5°	1200	98	07	07	03	0	1019.0	4	0.0	77.2	70.5	77.2	4	4	4	4	0	0	14	2	2
2/5	21.6°	162.4°	1800	98	12	10	01	0	1020.3	2	1.7	75.0	70.8	75.9	1	1	2	4	0	0	32	3	3
2/6	22.0°	162.0°	0000	98	16	13	01	0	1020.0	7	2.0	78.1	71.9	76.3	1	1	1	4	0	0	35	3	3
2/6	22.0°	161.0°	0600	98	15	15	00	0	1021.7	2	3.0	75.7	71.4	74.8	9	X	X	0	X	X	32	3	3
2/6	22.1°	160.1°	1200	98	01	03	00	0	1020.0	7	1.2	75.2	71.2	74.5	1	1	3	4	0	0	01	2	1
2/7	21.8°	159.6°	0600	98	07	15	00	2	1020.7	2	1.0	75.3	70.0	74.1	9	X	X	0	X	X	12	2	1
2/7	22.1°	160.5°	1200	98	15	03	00	2	1020.7	4	0.0	74.5	67.8	75.0	6	6	1	4	0	0	15	2	1
2/7	22.0°	161.4°	1800	98	32	01	01	2	1020.0	4	0.0	74.5	64.9	75.0	2	1	1	5	4	0	14	3	1
2/8	22.2°	162.5°	0000	98	32	04	02	0	1018.0	7	1.2	80.0	69.1	78.4	1	1	2	5	0	0	19	3	1
2/8	23.1°	162.5°	0600	98	34	07	01	0	1018.6	2	2.0	75.0	66.8	76.1	1	1	1	4	0	0	34	2	2
2/8	24.0°	162.5°	1200	98	36	23	00	0	1019.3	2	0.5	70.0	66.5	74.1	9	X	X	X	X	X	34	2	2
2/8	24.0°	163.1°	1800	97	36	23	02	2	1021.0	2	1.7	70.0	64.3	74.7	7	7	8	4	X	X	34	3	4
2/9	23.9°	164.3°	0100	98	01	19	02	2	1021.7	7	1.0	73.5	62.0	72.5	4	4	1	4	0	0	33	2	3
2/9	23.9°	165.1°	0700	97	05	24	00	2	1024.0	2	3.0	67.9	59.0	72.5	9	X	X	X	X	X	36	2	3
2/9	24.0°	165.7°	1300	97	04	23	00	2	1023.4	4	0.0	69.9	60.1	72.7	9	X	X	X	X	X	32	2	4
2/10	23.8°	166.4°	0700	97	06	22	00	2	1026.8	2	2.4	68.4	62.0	71.7	9	X	X	X	X	X	XX	X	4
2/10	23.3°	167.0°	1300	98	09	21	00	2	1024.7	7	2.0	70.0	64.0	73.0	9	X	X	X	X	X	XX	X	5
2/11	22.0°	167.2°	0000	98	10	20	01	2	1021.7	7	3.0	73.3	66.0	74.1	6	2	1	4	6	2	09	2	5
2/11	21.2°	167.2°	0600	98	08	20	00	2	1020.3	3	0.4	73.4	68.4	76.5	6	X	X	X	X	X	08	2	5
2/11	20.5°	167.0°	1200	98	09	21	00	2	1019.3	7	1.5	76.0	70.5	77.7	9	X	X	X	X	X	08	2	5
2/11	19.6°	166.9°	1800	97	08	22	15	5	1017.3	3	0.3	76.2	71.4	77.5	7	4	8	4	0	8	09	3	6
2/12	18.8°	167.0°	0000	97	10	18	02	2	1015.9	7	2.7	79.0	73.5	77.5	7	3	2	4	0	2	09	3	5
2/12	17.8°	167.0°	0600	97	08	21	15	6	1014.9	4	0.0	75.8	72.0	77.7	7	3	8	4	8	X	09	2	4
2/12	16.9°	167.1°	1200	97	09	16	00	2	1014.6	7	2.0	77.1	72.9	77.7	9	X	X	X	X	X	09	2	4
2/12	16.1°	167.0°	1800	97	08	20	00	1	1013.2	3	0.2	77.2	73.0	78.1	3	2	2	4	6	0	08	2	4
2/13	16.2°	167.2°	0000	98	07	18	02	2	1012.5	7	1.5	86.0	76.0	78.8	6	4	2	4	3	0	07	2	4
2/13	16.0°	168.6°	0600	98	07	19	03	2	1012.2	2	1.5	78.0	72.1	78.6	7	4	8	4	3	0	08	2	4
2/13	16.1°	169.5°	1200	98	08	16	00	2	1012.9	4	0.0	79.1	73.2	78.1	9	X	X	X	X	X	08	2	3
2/15	16.8°	169.2°	1200	98	09	16	00	2	1013.2	4	0.0	78.0	73.5	77.7	9	X	X	X	X	X	09	X	X
2/15	17.4°	169.1°	1800	98	10	14	00	0	1013.2	2	1.0	76.5	72.5	78.1	4	4	2	4	0	0	11	2	2
2/16	18.4°	169.3°	0000	98	09	17	50	2	1014.2	7	2.0	77.8	72.5	78.3	7	4	2	4	2	0	09	2	2
2/16	19.1°	169.4°	0600	98	08	13	01	1	1014.2	2	1.5	77.3	71.8	77.6	3	3	2	4	0	0	09	2	2
2/16	19.7°	169.4°	1200	98	08	18	00	1	1015.9	1	1.0	77.8	72.2	77.2	9	X	X	X	X	X	09	2	2
2/16	20.4°	169.3°	1800	98	07	15	00	1	1016.3	3	1.7			77.4	3	3	3	4	0	0	05	2	2

Table 4.--Record of weather observations (USWB 1210-F and 615-5), Charles H. Gilbert cruise 51 (con.)

Date, 1961	Latitude N.	Longitude W.	Time (GCT)	Visibility	Wind		Weather		Pressure			Temperature (° F.)			Clouds						Waves		
					Direction	Speed (kn.)	Present	Past	Bar. corr. (mb.)	Characteristic	Amt. change	Dry bulb	Wet bulb	Sea water	Total amount	Amount low	Type low	Height low	Type middle	Type high	Direction	Period	Height
2/17	21.6°	169.4°	0000	98	07	18	01	0	1016.9	7	2.0	76.8	71.0	77.2	3	2	2	4	6	0	05	2	2
2/17	22.4°	169.4°	0600	98	07	13	03	1	1017.3	2	1.2	74.8	70.5	74.5	4	4	1	4	0	0	06	2	2
2/17	23.1°	169.4°	1200	98	08	12	00	2	1019.0	4	0.0	74.5	70.0	75.2	9	X	X	X	X	X	06	2	2
2/17	24.0°	169.7°	1800	98	11	11	00	0	1019.0	2	1.2	73.5	68.4	73.9	1	1	3	4	0	0	09	2	1
2/18	24.0°	168.7°	0000	98	09	05	01	0	1019.3	7	2.0	73.5	67.5	74.5	2	2	1	2	0	0	09	2	1
2/18	24.0°	167.7°	0600	98	06	11	03	0	1018.6	2	1.0	73.0	69.0	73.4	5	5	1	4	0	0	09	2	2
2/18	24.1°	169.0°	1200	98	08	14	00	2	1018.6	4	0.0	77.3	67.1	73.4	9	X	X	X	X	X	09	2	2
2/20	24.0°	165.6°	0600	98	07	11	02	0	1019.3	2	2.0	73.0	68.0	73.0	2	2	1	4	0	0	05	2	2
2/20	24.0°	164.9°	1200	98	09	13	00	2	1020.7	6	1.0	72.5	66.8	72.7	9	X	X	X	X	X	05	2	2
2/20	23.6°	164.5°	1800	98	06	16	25	2	1021.0	2	1.3	72.5	69.0	72.7	5	4	2	4	4	0	09	2	2
2/21	23.5°	164.5°	0000	98	09	22	03	0	1018.6	7	2.0	74.0	69.2	74.8	4	3	1	4	4	0	09	2	3
2/21	21.7°	164.6°	0600	98	09	21	03	0	1017.6	2	1.0	76.5	71.2	75.6	6	6	2	4	0	0	09	2	4
2/21	20.7°	164.5°	1200	98	08	22	00	2	1017.3	7	1.0	76.2	71.2	76.5	9	X	X	X	X	X	09	2	4
2/21	19.8°	164.5°	1800	98	09	21	00	2	1016.3	2	1.5	77.3	72.5	77.0	6	4	1	4	4	0	09	2	4
2/22	19.0°	164.5°	0000	98	07	17	01	0	1015.2	7	2.0	77.5	72.0	77.2	3	2	1	4	4	0	02	2	4
2/22	18.2°	164.5°	0600	98	08	17	03	0	1014.9	2	1.0	77.5	73.0	77.4	5	2	1	4	3	0	09	2	4
2/22	17.3°	164.5°	1200	98	07	20	00	2	1014.2	7	1.0	77.5	73.2	77.4	9	X	X	X	X	X	09	2	4
2/22	16.4°	164.5°	1800	98	09	20	00	2	1013.2	2	1.5	77.5	73.1	77.5	5	3	3	4	3	4	09	2	4
2/23	16.0°	164.0°	0000	98	09	16	01	0	1012.5	7	2.0	77.8	73.3	77.5	3	2	2	4	3	0	09	2	4
2/23	16.0°	163.5°	0600	98	08	21	03	1	1012.2	2	1.0	77.3	72.9	77.5	6	4	8	4	4	0	09	2	4
2/23	16.0°	162.9°	1200	98	09	20	00	0	1012.9	6	1.0	77.2	73.1	77.4	9	X	X	X	X	X	09	2	4
2/23	16.2°	162.1°	1800	98	08	22	00	0	1013.5	2	1.0	78.5	71.5	77.9	2	1	1	4	4	0	09	2	4
2/24	16.2°	161.7°	0000	98	09	18	03	0	1013.2	7	1.5	77.5	71.3	77.7	3	3	2	4	0	0	09	2	4
2/24	16.2°	160.8°	0600	98	08	21	00	0	1012.5	2	1.0	77.3	71.5	77.5	9	X	X	X	X	X	09	2	4
2/24	16.1°	160.2°	1200	98	07	16	00	1	1013.2	7	1.0	76.8	71.9	77.2	9	X	X	X	X	X	09	2	4
2/24	16.1°	159.7°	1500	98	08	19	00	0	1011.9	6	1.0	76.5	71.5	77.2	9	X	X	X	X	X	09	2	4
2/24	16.1°	159.6°	1800	98	08	19	03	0	1013.2	2	1.0	77.0	72.3	77.0	5	5	3	4	0	0	09	2	4
2/25	16.8°	159.5°	0000	98	08	22	16	2	1012.9	7	2.0	77.5	71.9	77.0	5	3	2	4	6	0	09	2	4
2/25	17.8°	159.6°	0600	98	08	21	01	1	1013.5	3	1.0	76.6	71.8	77.0	1	1	2	4	0	0	08	2	5
2/25	18.6°	159.5°	1200	98	12	16	00	2	1014.6	4	0.0	76.9	71.8	77.5	9	X	X	X	X	X	09	2	2
2/25	19.7°	159.4°	1800	98	08	22	25	6	1016.3	3	2.0	76.4	70.7	77.0	7	6	8	4	7	0	09	2	4
2/26	20.6°	159.4°	0000	98	10	14	01	0	1014.6	7	3.0	77.0	70.7	76.6	3	2	3	4	4	0	09	2	4
2/26	21.6°	159.5°	0600	98	07	20	00	0	1016.9	2	3.0	76.5	70.5	74.5	9	X	X	X	X	X	09	2	2
2/26	22.3°	159.7°	1200	98	04	17	00	0	1017.3	4	0.0	75.0	68.7	73.8	9	X	X	X	X	X	09	2	3
2/26	23.0°	159.5°	1800	98	10	18	00	1	1017.6	3	1.8	73.0	68.4	73.0	6	3	2	4	8	0	09	2	4

Table 4.--Record of weather observations (USWB 1210-F and 615-5), Charles H. Gilbert cruise 51 (con.)

Date, 1961	Latitude N.	Longitude W.	Time (GCT)	Visibility	Wind		Weather		Pressure			Temperature (° F.)			Clouds						Waves		
					Direction	Speed (kn.)	Present	Past	Bar. corr. (mb.)	Characteristic	Amt. change	Dry bulb	Wet bulb	Sea water	Total amount	Amount low	Type low	Height low	Type middle	Type high	Direction	Period	Height
2/27	23.9°	159.5°	0000	98	09	19	01	0	1018.0	7	1.0	74.0	68.4	73.0	1	1	0	4	0	0	09	2	4
2/27	24.0°	158.9°	0600	98	12	19	03	0	1018.6	2	1.6	73.2	67.6	72.1	3	3	2	4	0	0	09	2	4
2/27	24.0°	158.4°	1200	98	11	21	03	0	1019.3	7	1.0	73.4	67.6	74.2	9	X	X	X	X	X	09	2	4
2/27	24.1°	157.8°	1800	98	09	15	00	1	1020.3	2	2.0	72.5	67.0	73.4	6	4	8	4	7	0	09	2	3
2/28	23.7°	157.5°	0000	98	10	14	01	8	1019.3	8	2.0	73.4	67.6	73.9	5	3	2	4	8	0	14	2	4
2/28	22.7°	157.5°	0600	98	10	18	00	2	1018.3	3	0.3	73.6	69.2	74.1	9	X	X	X	X	X	11	2	4
2/28	21.7°	157.5°	1200	98	11	16	00	2	1018.0	7	1.0	73.7	68.2	74.1	9	X	X	X	X	X	11	2	4

Table 5.--Record of weather observations (USWB 615-5), Charles H. Gilbert cruise 52[1/]

Date, 1961	Latitude N.	Longitude W.	Time (GCT)	Visibility	Wind		Weather		Pressure			Temperature (° F.)			Clouds						Waves		
					Direction	Speed (kn.)	Present	Past	Bar. corr. (mb.)	Characteristic	Amt. change	Dry bulb	Wet bulb	Sea water	Total amount	Amount low	Type low	Height low	Type middle	Type high	Direction	Period	Height
4/5	21.7°	158.5°	0000	99	07	19	03	1	1016.9	X	XX	73.2	64.9	77.0	6	6	2	4	0	0	03	3	4
4/5	22.2°	159.2°	0600	98	06	12	02	1	1016.9	X	XX	72.4	64.7	75.8	2	X	X	X	X	X	03	2	3
4/6	22.1°	160.7°	0600	98	07	12	00	X	1015.2	X	XX	73.2	65.4	74.7	9	X	X	X	X	X	XX	X	X
4/6	22.0°	162.5°	1800	98	10	13	02	1	1014.2	X	XX	73.7	61.8	74.1	2	1	2	4	5	4	09	2	2
4/7	22.0°	163.0°	0000	98	11	07	03	1	1013.5	X	XX	77.0	68.5	75.9	7	7	8	5	X	X	07	2	2
4/7	22.0°	164.1°	0600	98	03	07	15	8	1014.2	X	XX	75.4	68.6	77.2	7	7	8	5	X	X	07	2	2
4/7	22.0°	166.0°	1800	98	05	22	15	8	1014.6	X	XX	72.3	68.1	78.9	8	8	8	4	X	X	02	3	4
4/8	22.3°	166.1°	0000	98	05	22	02	8	1015.6	X	XX	71.0	63.9	75.9	8	8	8	4	X	X	04	3	4
4/9	23.9°	166.5°	1800	98	05	11	00	2	1015.9	X	XX	68.5	60.1	74.7	8	1	8	5	3	X	33	3	2
4/10	23.8°	167.0°	0000	98	05	07	02	2	1015.9	0	0.0	69.2	61.5	72.7	8	7	5	5	X	9	36	2	2
4/10	23.1°	167.1°	0600	97	01	14	50	5	1013.5	4	0.0	69.0	64.6	74.7	9	X	X	X	X	X	36	2	2
4/10	22.7°	166.9°	1200	97	02	06	50	5	1012.2	X	XX	69.8	67.0	75.0	9	X	X	X	X	X	36	2	2
4/10	22.3°	166.9°	1800	97	36	22	15	5	1010.2	X	XX	70.5	68.0	75.7	8	8	6	4	X	X	36	3	4
4/11	22.2°	166.0°	0000	97	33	14	02	2	1010.8	X	XX	73.0	66.3	76.3	8	8	6	4	X	X	32	3	3
4/11	21.7°	167.7°	0600	98	28	10	02	1	1010.8	X	XX	72.0	64.0	74.8	3	2	8	5	0	9	32	2	2
4/11	20.1°	166.7°	1800	98	01	08	00	X	1012.2	X	XX	74.0	65.8	77.4	7	7	4	5	0	0	49	2	2
4/12	19.3°	166.0°	0000	98	05	11	15	2	1011.9	X	XX	77.9	71.5	77.9	8	8	5	5	X	X	09	3	3
4/12	19.4°	166.7°	0600	98	07	12	15	8	1012.9	X	XX	74.6	72.0	77.7	8	8	8	5	X	X	09	3	3
4/12	19.6°	167.4°	1200	97	09	10	80	8	1013.5	X	XX	76.6	73.0	77.7	8	9	X	X	X	X	06	3	3
4/12	19.7°	166.2°	1800	97	13	07	01	8	1013.9	X	XX	75.0	72.2	77.4	8	7	8	X	X	X	01	2	2

1/ All columns in USWB 615-5 are not included here. Those deleted are:

Column 2 Day of week
" 3 Octant
" 13 Barometer as read
" 14 Barometer as corrected
" 17 Air temperature, °F.
" 23 Course of ship
" 24 Speed of ship
" 31 Diff. sea-air, °F.
" 32 Dew point, °F.

Table 5.--Record of weather observations (USWB 615-5), Charles H. Gilbert cruise 52 (con.)

Date, 1961	Latitude N.	Longitude W.	Time (GCT)	Visibility	Wind		Weather		Pressure			Temperature (° F.)			Clouds						Waves		
					Direction	Speed (kn.)	Present	Past	Bar. corr. (mb.)	Characteristic	Amt. change	Dry bulb	Wet bulb	Sea water	Total amount	Amount low	Type low	Height low	Type middle	Type high	Direction	Period	Height
4/13	19.3°	168.6°	0000	97	09	09	16	8	1013.9	X	XX	76.5	72.8	77.9	7	7	6	X	X	X	01	2	2
4/13	18.5°	168.6°	0600	98	14	07	15	8	1013.9	3	2.0	77.6	74.2	78.8	7	6	7	5	7	X	02	2	2
4/13	17.6°	168.5°	1200	98	10	18	00	8	1014.6	8	2.0	78.3	73.8	78.3	9	9	X	X	X	X	09	3	3
4/13	17.0°	168.3°	1800	98	11	14	00	2	1013.9	2	0.8	79.4	73.7	78.4	6	6	2	4	0	0	09	3	3
4/14	16.7°	169.0°	0000	98	08	18	01	2	1013.5	8	1.8	80.5	73.1	79.0	4	4	2	5	0	0	09	2	3
4/14	16.5°	169.5°	1800	98	08	14	03	X	1013.2	2	1.8	79.1	72.8	78.6	7	7	4	5	X	X	08	3	3
4/20	17.5°	169.2°	0600	98	10	10	01	X	1013.9	2	2.0	78.0	73.6	78.3	7	7	8	X	X	X	05	3	3
4/20	18.0°	169.9°	1200	97	05	09	50	5	1014.6	0	0.0	75.0	72.2	77.7	9	9	X	X	X	X	XX	X	X
4/20	19.1°	168.5°	1800	98	12	09	15	X	1015.2	2	1.0	78.8	72.8	78.4	7	7	4	5	X	X	49	2	2
4/21	20.2°	168.2°	0000	98	12	09	15	2	1015.6	8	0.4	77.2	73.0	78.8	7	7	4	5	4	0	49	X	3
4/21	20.9°	167.6°	0600	97	03	13	50	5	1015.9	2	1.5	76.0	72.6	77.5	8	8	8	5	X	X	03	2	3
4/21	21.8°	167.1°	1200	97	04	19	00	X	1017.3	8	0.2	73.2	71.0	77.0	9	9	X	X	X	X	03	2	3
4/21	22.5°	166.9°	1800	98	06	11	00	X	1019.0	2	2.0	73.6	68.7	75.6	7	6	8	4	6	X	04	2	2
4/22	23.3°	166.3°	0000	98	05	18	01	2	1019.3	8	0.4	73.5	67.7	75.0	6	4	2	5	6	0	05	2	3
4/27	23.0°	166.5°	0000	98	04	22	16	2	1019.3	7	1.2	73.0	69.6	75.6	7	7	5	4	X	X	06	4	6
4/27	22.2°	167.1°	0300	97	07	25	20	2	1016.9	6	5.0	74.5	71.6	75.0	9	9	5	4	X	X	06	4	6
4/27	22.5°	167.0°	0600	97	08	22	01	2	1017.3	3	0.4	75.0	70.6	76.5	7	5	8	4	6	0	06	3	4
4/27	21.8°	167.4°	1800	97	06	22	80	8	1016.3	2	0.8	73.8	69.7	77.4	8	3	8	4	6	X	07	3	4
4/28	21.4°	166.7°	0000	97	09	20	01	2	1015.2	8	1.2	75.0	70.0	77.2	7	3	8	4	6	0	09	3	5
4/28	21.0°	166.1°	0600	97	09	22	15	2	1014.2	3	0.2	73.8	69.2	76.3	7	2	8	4	3	9	09	3	5
4/28	20.6°	165.3°	1200	97	09	19	00	X	1013.2	8	1.2	75.2	71.0	76.6	9	9	X	X	X	X	09	3	5
4/28	20.5°	165.0°	1800	97	11	20	25	8	1013.5	2	1.5	74.0	70.5	76.8	7	2	2	4	6	0	10	3	5
4/29	20.0°	164.7°	0000	97	10	17	15	2	1012.9	8	1.0	76.0	72.6	77.4	8	3	8	4	6	X	11	3	4
4/29	19.2°	164.5°	0600	97	09	19	02	2	1012.9	3	0.8	77.0	73.5	77.4	8	2	8	4	7	X	11	3	4
4/29	19.2°	163.6°	1200	97	05	09	00	X	1013.2	8	1.2	78.6	74.2	78.1	9	9	X	X	X	X	11	3	4
4/29	19.4°	163.2°	1800	97	13	17	16	8	1013.9	0	0.2	75.0	71.4	78.3	8	8	6	5	X	X	12	2	3
4/30	19.5°	162.4°	0000	97	14	22	02	2	1012.5	6	1.0	77.5	72.7	78.3	8	2	8	5	7	X	13	3	4
4/30	19.6°	161.9°	0600	97	11	13	02	2	1013.5	1	2.0	77.1	72.5	77.9	7	7	6	5	X	X	11	3	4
4/30	20.0°	161.1°	1200	97	12	17	00	X	1013.9	8	1.4	77.2	72.0	77.9	9	9	X	X	X	X	10	2	3
4/30	19.7°	160.6°	1800	97	11	13	03	X	1014.2	2	1.8	77.3	71.4	77.7	9	9	6	X	X	X	10	2	3

Table 5.--Record of weather observations (USWB 615-5), Charles H. Gilbert cruise 52 (con.)

Date, 1961	Latitude N.	Longitude W.	Time (GCT)	Visibility	Wind		Weather		Pressure			Temperature (° F.)			Clouds						Waves		
					Direction	Speed (kn.)	Present	Past	Bar. corr. (mb.)	Characteristic	Amt. change	Dry bulb	Wet bulb	Sea water	Total amount	Amount low	Type low	Height low	Type middle	Type high	Direction	Period	Height
5/1	19.4°	160.0°	0000	97	16	16	02	8	1013.5	8	1.5	77.5	73.4	77.7	8	2	8	4	7	X	12	3	4
5/1	19.0°	159.6°	0600	97	12	15	02	2	1013.5	3	0.8	77.3	73.6	77.2	9	9	X	X	X	X	12	2	3
5/1	18.8°	159.3°	1200	97	14	14	02	2	1015.2	8	1.5	77.1	73.2	77.7	9	9	X	X	X	X	12	2	3
5/1	18.5°	158.7°	1800	97	14	19	02	2	1015.2	3	2.4	77.2	72.0	77.5	8	1	8	4	7	X	12	3	4
5/2	18.5°	158.5°	0000	97	11	15	02	2	1015.9	8	1.0	77.2	72.4	77.2	8	1	8	5	7	X	13	3	5
5/2	18.9°	158.4°	0600	97	13	15	02	2	1016.9	2	2.5	77.3	72.0	77.0	9	9	X	X	X	X	13	3	5
5/2	19.9°	158.2°	1200	97	10	15	02	2	1016.9	8	0.8	76.8	73.0	76.6	9	9	X	X	X	X	11	2	4
5/2	20.8°	158.1°	1800	98	07	16	01	2	1016.3	2	2.1	77.8	71.5	77.5	6	6	5	X	X	X	07	2	4
5/5	20.5°	157.6°	0600	98	11	21	00	0	1017.6	3	1.0	78.1	72.9	77.9	9	9	X	X	X	X	08	3	5
5/5	19.8°	157.5°	1200	98	07	19	00	1	1017.6	7	1.0	76.4	72.2	77.7	8	8	X	X	X	X	09	3	5
5/5	19.1°	157.6°	1800	98	14	19	03	0	1018.6	1	1.0	77.2	71.5	78.1	4	3	X	X	X	X	08	3	4
5/6	18.8°	158.3°	0000	98	10	17	03	1	1017.3	8	1.1	78.8	72.8	77.5	4	4	2	X	7	X	08	3	4
5/6	18.4°	159.1°	0600	98	09	18	01	1	1016.9	1	1.0	77.5	73.2	77.4	4	4	X	X	X	X	09	3	4
5/6	18.2°	158.8°	1200	97	11	14	02	0	1016.6	7	1.2	77.0	71.0	77.2	4	4	X	X	X	X	09	3	4
5/6	18.1°	158.5°	1800	97	09	25	01	0	1018.0	2	1.2	78.0	72.0	77.5	3	1	2	X	6	5	09	3	6
5/7	18.3°	158.0°	0000	98	10	20	03	2	1015.9	7	1.6	78.0	72.4	76.8	6	6	X	X	3	X	09	3	6
5/7	18.7°	157.5°	0600	97	10	18	25	8	1017.3	3	1.8	74.0	71.4	77.9	7	7	X	X	X	X	09	3	5
5/7	19.5°	156.2°	1800	98	06	04	16	2	1018.0	2	1.0	77.2	69.7	76.5	6	6	8	X	6	4	02	3	2

Table 6.--Record of weather observations (USWB 615-5), Charles H. Gilbert cruise 53 1/

Date, 1961	Latitude N.	Longitude W.	Time (GCT)	Visibility	Wind		Weather		Pressure			Temperature (° F.)			Clouds						Waves		
					Direction	Speed (kn.)	Present	Past	Bar. corr. (mb.)	Characteristic	Amt. change	Dry bulb	Wet bulb	Sea water	Total amount	Amount low	Type low	Height low	Type middle	Type high	Direction	Period	Height
6/24	20.7°	157.1°	0600	98	06	04	03	2	1014.9	2	1.5	79.8	69.7	79.3	5	5	2	X	X	X	03	2	4
6/24	20.2°	156.6°	1200	98	10	24	01	1	1013.9	7	3.1	76.5	71.8	77.7	4	4	2	X	X	X	08	2	4
6/24	19.6°	156.1°	1800	98	17	06	03	1	1015.6	2	2.0	78.0	70.5	77.7	4	4	2	X	X	X	18	2	2
6/25	18.7°	155.8°	2000	98	10	27	01	2	1014.6	6	1.0	78.3	71.9	77.9	4	3	2	4	6	9	11	2	4
6/25	18.1°	155.3°	0600	98	08	24	00	1	1015.9	2	2.0	77.8	72.4	76.8	4	4	2	3	X	X	10	2	4
6/25	17.6°	155.2°	1200	97	08	22	00	1	1015.2	7	2.0	76.5	71.3	76.8	9	X	X	X	X	X	09	2	4
6/25	17.0°	154.7°	1800	97	08	21	14	2	1015.6	2	1.0	77.8	72.5	77.2	5	3	2	4	6	X	09	3	7
6/26	16.3°	154.2°	0000	98	07	20	01	2	1013.5	7	2.0	76.1	71.2	76.8	5	3	2	4	6	X	09	2	5
6/26	16.0°	152.6°	0600	97	09	22	03	2	1013.9	2	2.0	77.5	71.5	76.6	7	2	2	4	6	X	09	2	5
6/26	16.0°	152.9°	1200	98	11	18	00	2	1013.9	7	2.0	76.3	72.0	76.6	9	X	X	X	X	X	09	2	3
6/26	16.0°	152.1°	1800	98	09	20	01	2	1014.9	2	2.0	77.5	71.8	76.5	8	X	0	X	6	X	09	2	6
6/27	16.2°	151.5°	0000	97	07	22	01	2	1014.6	7	1.0	82.0	73.8	76.8	3	3	1	5	X	X	09	2	4
6/27	17.3°	151.6°	0600	97	07	22	01	1	1014.9	2	1.0	79.0	72.0	76.5	3	X	0	X	8	X	09	2	5
6/27	18.0°	151.6°	1200	97	06	18	00	2	1013.9	7	2.0	77.8	70.3	78.8	9	X	X	X	X	X	09	2	3
6/27	18.8°	151.6°	1800	98	08	20	14	2	1016.3	2	2.0	78.0	72.5	76.6	7	6	9	4	6	3	07	2	4
6/28	19.8°	151.8°	0000	98	06	21	01	1	1015.6	7	1.0	77.5	70.5	76.3	4	4	2	5	X	X	09	2	4
6/28	20.6°	151.7°	0600	98	06	20	01	0	1015.6	2	1.0	78.5	71.5	76.1	2	1	2	5	0	1	06	2	4
6/28	21.3°	151.6°	1200	97	07	22	15	2	1015.9	7	1.0	75.2	70.2	76.8	9	X	X	X	X	X	06	2	3
6/28	22.2°	151.6°	1800	97	06	20	15	2	1016.9	2	1.0	78.0	72.0	75.6	6	5	2	4	6	0	06	2	4
6/29	23.0°	151.5°	0000	98	06	19	02	2	1016.9	7	1.0	77.5	71.2	75.7	4	4	2	5	0	0	06	2	4

1/ All columns in USWB 615-5 are not included here. Those deleted are:

Column	2	Day of week
"	3	Octant
"	13	Barometer as read
"	14	Barometer as corrected
"	17	Air temperature, °F.
"	23	Course of ship
"	24	Speed of ship
"	31	Diff. sea-air, °F.
"	32	Dew point, °F.

Table 6.--Record of weather observations (USWB 615-5), Charles H. Gilbert cruise 53 (con.)

Date, 1961	Latitude N.	Longitude W.	Time (GCT)	Visibility	Wind		Weather		Pressure			Temperature (° F.)			Clouds						Waves		
					Direction	Speed (kn.)	Present	Past	Bar. corr. (mb.)	Characteristic	Amt. change	Dry bulb	Wet bulb	Sea water	Total amount	Amount low	Type low	Height low	Type middle	Type high	Direction	Period	Height
6/29	23.0°	152.6°	0600	97	06	23	14	2	1016.9	2	1.0	77.0	71.0	76.5	6	4	2	4	6	0	06	2	4
6/29	23.3°	153.1°	1200	97	07	21	62	2	1016.9	4	0.0	76.0	70.6	76.8	9	X	X	X	X	X	06	2	4
6/29	23.8°	153.7°	1800	97	07	20	01	2	1018.3	2	0.2	77.1	71.0	76.5	5	1	2	4	6	0	06	2	4
6/30	23.6°	154.1°	0000	97	09	16	02	1	1017.6	7	1.0	77.0	71.0	76.6	4	4	2	1	6	0	09	2	3
6/30	22.6°	154.1°	0600	97	09	18	03	2	1016.9	2	1.0	77.8	72.3	76.5	4	4	2	4	0	0	08	2	3
6/30	21.7°	154.1°	1200	97	12	16	60	2	1015.6	7	2.0	74.3	71.0	77.2	9	X	X	X	X	X	08	2	3
7/1	21.0°	154.0°	1800	97	11	15	01	2	1016.9	2	2.0	78.5	72.8	77.0	4	4	2	4	0	0	08	2	3
7/1	19.8°	154.0°	0000	98	13	12	03	1	1016.6	7	1.0	78.0	73.5	78.3	4	4	4	4	0	0	09	2	2
7/1	18.9°	154.0°	0600	97	11	16	14	2	1016.3	2	1.0	77.5	74.5	77.2	7	7	2	3	0	0	09	2	3
7/1	18.0°	154.0°	1200	98	09	16	00	0	1015.9	7	2.0	76.9	72.5	76.6	9	X	X	X	X	X	09	2	2
7/1	16.5°	154.5°	1800	98	08	17	03	2	1016.6	2	1.0	77.9	71.9	77.2	6	1	2	4	6	0	08	2	3
7/2	16.2°	154.8°	0000	99	08	16	03	1	1015.9	7	2.0	78.8	74.5	77.5	7	6	2	5	0	9	09	2	3
7/2	16.2°	154.9°	0600	97	07	20	14	2	1015.9	2	1.0	80.0	75.0	77.9	7	7	3	4	X	X	09	2	3
7/2	16.2°	156.9°	1200	98	06	18	00	1	1015.9	7	2.0	78.0	74.0	77.7	9	X	X	X	X	X	09	2	3
7/2	17.1°	157.2°	1800	98	09	17	01	1	1015.2	4	0.0	79.4	73.9	72.2	4	4	1	4	0	0	07	2	3
7/3	18.0°	157.2°	0000	98	08	22	01	0	1015.2	4	0.0	79.9	74.2	77.7	2	2	1	4	0	0	07	2	2
7/3	19.2°	157.7°	0600	98	11	11	03	2	1019.6	2	1.0	79.9	74.0	78.8	6	6	2	4	0	1	07	2	2
7/3	20.1°	157.7°	1200	98	09	14	00	1	1015.6	7	2.0	78.5	73.1	79.3	9	X	X	X	X	X	07	2	2
7/8	19.3°	158.3°	1200	97	10	11	01	1	1015.9	0	1.3	77.7	73.2	79.3	5	X	X	X	X	X	10	2	3
7/8	19.1°	158.6°	1800	98	14	14	01	2	1016.9	2	1.0	78.0	72.3	78.3	3	3	2	4	0	0	13	2	2
7/9	18.3°	158.8°	0000	98	14	15	02	0	1015.9	4	1.0	81.0	73.5		2	2	1	5	0	0	14	2	2
7/9	17.6°	159.2°	0600	98	05	16	03	2	1015.2	2	1.0	78.8	73.8	78.4	4	4	2	4	0	0	10	2	2
7/9	16.9°	159.4°	1200	98	11	16	00	0	1015.2	0	0.0	79.3	75.0	78.2	0	X	X	X	X	X	11	2	2
7/9	16.2°	159.6°	1800	97	07	18	21	2	1015.9	2	2.0	79.0	75.1	78.3	6	6	2	4	0	0	09	2	3
7/10	16.0°	160.3°	0000	97	09	16	02	2	1015.2	5	1.0	81.2	75.9	78.5	5	5	6	4	6	6	09	2	3
7/10	16.2°	162.0°	0600	97	10	16	03	2	1015.2	2	1.0	79.0	74.7	78.2	7	8	2	4	0	0	12	2	3
7/10	16.1°	162.3°	1200	97	12	15	00	0	1015.6	4	0.0	78.7	74.8	78.4	3	X	X	X	X	X	12	2	3
7/10	15.9°	163.2°	1800	97	09	17	01	0	1015.6	4	0.0	81.0	75.4	79.2	3	3	2	4	0	0	09	2	2
7/11	16.0°	164.0°	0000	97	09	19	03	1	1015.2	3	0.3	82.8	75.2	79.4	6	5	1	5	0	4	09	2	2
7/11	16.6°	164.6°	0600	97	09	14	03	2	1014.2	2	0.5	80.0	75.0	79.9	6	5	2	4	6	0	09	2	2
7/11	17.4°	164.5°	1200	97	09	11	01	0	1014.9	0	0.7	80.6	74.2	79.2	3	X	X	X	X	X	09	2	2
7/11	18.3°	164.7°	1800	97	07	07	03	2	1015.2	2	1.2	79.0	73.5	79.2	6	5	2	4	0	3	09	2	1
7/12	19.1°	164.5°	0000	97	05	08	03	2	1015.2	4	0.0	81.0	75.3	79.5	7	8	9	3	6	1	05	2	2
7/12	20.0°	164.7°	0600	97	09	13	01	2	1014.6	2	1.0	79.7	73.5	80.1	6	1	2	4	6	2	08	2	2
7/12	20.9°	164.7°	1300	97	07	18	20	0	1014.9	1	0.3	78.4	73.5	80.4	2	X	X	X	X	X	07	3	3

Table 6.--Record of weather observations (USWB 615-5), Charles H. Gilbert cruise 53 (con.)

Date, 1961	Latitude N.	Longitude W.	Time (GCT)	Visibility	Wind		Weather		Pressure			Temperature (° F.)			Clouds						Waves		
					Direction	Speed (kn.)	Present	Past	Bar. corr. (mb.)	Characteristic	Amt. change	Dry bulb	Wet bulb	Sea water	Total amount	Amount low	Type low	Height low	Type middle	Type high	Direction	Period	Height
7/12	21.8°	164.7°	1800	97	08	18	01	1	1015.9	2	2.0	79.2	73.5	79.2	3	3	2	4	0	0	07	2	3
7/13	22.6°	164.6°	0000	98	06	18	03	1	1016.9	2	1.0	84.2	74.5	79.8	4	5	8	4	6	1	08	2	3
7/13	23.1°	164.6°	0600	98	09	17	01	2	1017.3	2	1.0	79.8	73.5	79.2	7	6	8	4	0	7	08	2	2
7/13	24.0°	164.7°	1200	97	09	10	00	0	1018.3	1	1.0	79.9	73.4	79.0	2	X	X	X	X	X	09	2	2
7/15	23.8°	167.0°	0000	98	07	19	00	0	1018.3	0	0.0	80.2	78.4	80.0	2	1	3	4	7	0	07	2	2
7/15	23.9°	167.8°	0600	97	07	17	01	2	1017.3	4	0.0	80.9	73.9	79.3	4	4	3	5	0	0	07	2	2
7/15	23.9°	168.7°	1200	97	07	12	00	0	1018.3	0	0.0	80.3	73.3	79.3	1	X	X	X	X	X	07	2	2
7/15	23.6°	169.4°	1800	97	06	13	01	0	1017.3	4	0.0	78.8	73.8	79.2	2	2	2	4	0	0	07	2	2
7/16	22.6°	169.4°	0000	97	16	03	25	1	1016.6	6	1.0	78.2	74.0	80.2	3	3	2	4	0	0	09	2	3
7/16	21.7°	169.5°	0600	97	06	18	01	1	1015.2	2	0.4	79.9	75.0	79.9	3	2	2	4	0	5	09	2	3
7/16	21.0°	169.5°	1200	97	10	18	00	0	1015.6	0	0.3	80.3	75.0	80.2	2	X	X	X	X	X	10	3	5
7/16	20.1°	169.5°	1800	98	09	15	00	0	1015.2	2	1.0	81.0	74.5	79.9	4	3	2	4	6	4	10	3	4
7/17	19.4°	169.7°	0000	97	14	15	16	1	1014.6	6	0.7	80.6	75.3	80.6	9	7	7	4	1	0	16	3	3
7/17	17.7°	169.5°	1200	97	13	28	00	1	1013.5	6	1.0	80.8	74.8	80.4	4	X	X	X	X	X	13	3	3
7/20	16.0°	169.3°	0600	98	09	13	00	1	1011.5	2	2.0	80.5	74.0	80.2	3	3	2	4	0	0	09	3	3
7/20	16.0°	168.7°	1200	98	09	15	00	1	1012.2	7	1.0	79.8	73.0	80.2	0	0	0	X	0	0	09	2	3
7/20	16.0°	168.0°	1800	98	09	12	03	0	1012.5	1	0.3	80.2	78.0	80.2	3	3	2	3	0	0	09	3	3
7/21	16.0°	167.1°	0000	98	10	13	01	2	1012.9	7	1.2	81.8	74.8	80.2	7	2	2	5	0	6	09	2	3
7/21	16.8°	167.1°	0600	97	09	16	03	2	1013.2	2	1.0	80.0	74.5	80.2	7	2	2	4	0	7	09	2	3
7/21	17.7°	167.2°	1200	97	09	18	00	2	1014.9	4	0.0	79.8	72.8	80.6	9	X	X	X	X	X	09	2	3
7/21	18.6°	167.1°	1800	98	06	14	03	1	1015.9	1	1.0	80.0	74.8	80.4	9	8	6	5	0	0	09	2	3
7/22	19.4°	167.1°	0000	98	07	15	01	2	1015.9	8	0.8	80.4	74.0	80.8	6	3	2	4	0	2	09	2	3
7/22	20.2°	167.1°	0600	97	06	16	03	2	1016.3	2	1.0	79.8	74.0	80.2	7	4	2	4	0	7	07	2	3
7/22	21.2°	167.1°	1200	97	09	15	00	2	1016.6	7	1.0	79.4	74.3	79.7	9	X	X	X	X	X	05	2	3
7/22	22.0°	167.2°	1800	98	07	14	02	2	1016.6	4	0.0	79.8	73.5	79.5	7	7	2	4	3	0	07	2	2
7/23	22.8°	167.0°	0000	98	07	13	01	2	1016.6	6	0.8	79.0	73.0	80.1	4	3	2	4	0	9	07	2	2
7/23	23.3°	166.1°	0600	98	09	11	01	0	1016.6	4	0.0	78.5	72.2	79.9	3	3	2	4	0	0	07	2	2
7/23	23.7°	165.4°	1200	97	09	12	00	0	1016.6	7	0.4	78.5	71.3	79.0	9	X	X	X	X	X	07	2	2
7/23	24.0°	164.7°	1800	98	06	10	03	1	1016.6	4	0.0	79.8	72.8	78.8	3	3	2	4	0	0	06	2	2
7/24	24.0°	163.7°	0000	98	09	10	01	1	1016.9	8	0.2	79.7	72.5	80.2	4	4	2	5	0	5	06	2	2
7/24	24.1°	162.7°	0600	98	12	08	01	0	1016.6	2	1.0	78.2	71.9	79.7	3	3	2	4	0	0	09	2	2
7/24	23.9°	162.1°	1200	97	10	13	01	0	1016.6	7	1.0	78.2	73.0	78.8	9	X	X	X	X	X	09	2	2
7/24	23.0°	162.0°	1800	97	11	16	03	0	1016.9	4	0.0	78.0	72.5	79.2	4	4	2	4	0	0	09	2	2
7/25	22.1°	162.0°	0000	98	09	15	01	1	1016.6	0	0.1	79.5	74.0	79.5	5	5	2	4	0	0	09	2	2
7/25	21.5°	162.1°	0600	98	09	14	01	0	1015.2	3	1.0	79.0	73.0	80.1	4	4	2	4	6	0	09	2	2

Table 6.--Record of weather observations (USWB 615-5), Charles H. Gilbert cruise 53 (con.)

Date, 1961	Latitude N.	Longitude W.	Time (GCT)	Visibility	Wind		Weather		Pressure			Temperature (° F.)			Clouds						Waves		
					Direction	Speed (kn.)	Present	Past	Bar. corr. (mb.)	Characteristic	Amt. change	Dry bulb	Wet bulb	Sea water	Total amount	Amount low	Type low	Height low	Type middle	Type high	Direction	Period	Height
7/25	20.4°	162.2°	1200	98	11	11	01	0	1014.6	8	1.2	79.1	74.0	80.4	3	2	2	4	0	2	09	2	2
7/25	19.6°	162.1°	1800	98	10	11	02	0	1014.9	2	1.0	78.5	72.5	79.9	2	2	2	4	0	0	09	2	2
7/26	18.7°	162.1°	0000	98	10	16	16	2	1013.5	7	1.5	78.5	73.9	80.6	6	6	2	4	0	0	10	2	2
7/26	17.6°	162.0°	0600	98	09	14	01	0	1013.5	4	0.0	78.5	72.8	78.8	3	2	2	4	0	2	09	2	4
7/26	18.0°	161.5°	1200	98	09	10	01	0	1013.5	7	1.0	79.0	72.8	79.7	2	2	2	4	0	0	09	2	3
7/26	17.0°	160.8°	1800	98	11	14	03	1	1015.2	2	3.0	78.5	72.5	80.0	4	4	2	4	0	0	09	2	3
7/27	17.0°	160.0°	0000	98	08	13	03	1	1013.9	7	1.0	80.8	73.8	79.3	4	4	2	5	0	0	09	2	2
7/27	17.8°	160.0°	0600	98	07	15	03	0	1014.6	2	2.0	78.5	72.8	79.2	2	1	2	4	4	0	06	2	2
7/27	18.9°	160.0°	1200	98	08	13	01	1	1015.2	0	0.0	80.0	74.7	79.3	4	4	2	4	0	0	07	2	2
7/27	19.9°	159.9°	1800	98	08	11	03	1	1015.9	2	1.0	78.8	72.8	79.9	4	4	2	4	0	0	07	2	1
7/28	20.5°	159.9°	0000	98	09	11	01	2	1016.3	0	0.0	80.1	73.8	79.9	4	4	2	4	0	0	07	2	2
7/28	23.1°	159.8°	1800	98	08	18	03	2	1018.3	2	1.0	78.5	72.3	78.4	6	4	2	4	0	6	05	3	3
7/29	24.0°	159.6°	0000	97	08	17	01	2	1018.3	4	0.0	78.9	71.9	79.2	7	5	2	5	0	2	07	3	3
7/29	24.0°	158.7°	0600	97	09	18	03	2	1018.0	4	0.0	79.0	71.8	78.3	7	5	2	5	0	7	07	3	3
7/29	24.1°	157.7°	1200	97	09	12	14	2	1016.9	7	0.5	77.0	73.5	78.6	7	5	2	4	0	9	07	3	3
7/29	24.0°	156.9°	1800	97	09	16	03	2	1017.3	2	1.0	77.0	72.0	78.3	7	5	2	4	0	8	07	3	3
7/30	23.6°	157.2°	0000	97	09	16	03	2	1016.3	7	1.0	78.0	73.0	78.4	7	4	2	4	0	2	07	3	3
7/30	22.6°	157.5°	0600	97	09	14	03	2	1016.3	4	0.0	78.0	72.0	78.3	7	4	2	4	0	8	07	3	3

Table 7.--Zooplankton station positions and sample weights, Charles H. Gilbert cruise 51. All hauls were oblique, from 60 m. to the surface

Station	Date, 1961	Time (ZT)		Position		Water strained ($m.^3$)	Weight ($g./1{,}000\ m.^3$)
		Begin	End	Lat. N.	Long. W.		
7	1/19	0243	0310	19°21'	156°31'	1731.1	50.3
15	1/20	0215	0243	16°34'	151°14'	1506.1	39.5
23	1/21	0215	0246	16°18'	151°33'	1703.2	58.4
31	1/22	0210	0239	19°31'	151°45'	1648.9	78.5
39	1/23	0215	0243	22°41'	151°15'	1439.7	49.2
63	1/26	0215	0247	18°17'	154°06'	1720.6	35.9
71	1/27	0210	0243	16°05'	155°28'	1538.0	37.5
79	1/28	0210	0241	18°04'	157°20'	1561.1	33.3
93	2/2	0219	0247	18°40'	158°41'	1052.8	34.7
101	2/3	0215	0244	16°02'	160°00'	947.5	36.9
109	2/4	1420	1459	17°19'	162°31'	1654.8	40.9
117	2/5	0215	0244	24°44'	162°25'	1328.8	26.2
128	2/8	0217	0242	23°58'	162°28'	1049.5	38.3
165	2/15	0115	0153	16°46'	169°10'	1521.9	81.1
173	2/16	0115	0144	19°46'	169°20'	1467.9	46.5
181	2/17	0112	0142	23°08'	169°34'	1414.7	39.5
189	2/18	0202	0232	24°02'	166°58'	1362.0	56.4
194	2/20	0117	0147	24°02'	164°55'	1319.2	46.1

N = 18
Total = 829.2
$\bar{x}$ = 46.1

Table 8.--Zooplankton station positions and sample weights, Charles H. Gilbert cruise 52. All hauls were oblique, from 60 m. to the surface, except at station 14

Station	Date, 1961	Time (ZT)		Position		Water strained ($m.^3$)	Weight ($g./1{,}000\ m.^3$)
		Begin	End	Lat. N.	Long. W.		
12	4/5	2105	2134	22°07'	160°51'	1426.8	61.5
14	4/6	1125	1155	22°02'	162°55'	1717.0	4.6[1/]
19	4/7	0219	0248	21°57'	165°09'	1744.3	28.0
32	4/9	2100	2130	23°03'	167°07'	1563.4	35.5
41	4/11	0213	0243	20°50'	167°06'	1523.9	41.8
47	4/11	2105	2137	19°26'	166°52'	1678.5	63.7
54	4/13	0222	0247	17°35'	168°35'	1405.1	41.8
79	4/20	0214	0244	18°21'	168°53'	1516.6	28.7
85	4/20	2100	2130	21°05'	167°36'	1642.3	25.6
148	5/5	2104	2134	18°22'	159°01'	1120.5	45.0

N = 9
Total = 371.6
$\bar{x}$ = 41.3

1/ Surface tow, value not included in averaging of zooplankton weights.

Table 9.--Zooplankton station positions and sample weights, Charles H. Gilbert cruise 53. Hauls were oblique, from 60 m. to the surface, except where indicated by S (surface tows)

Station	Sample	Date, 1961	Time (ZT)		Position		Water strained ($m.^3$)	Weight ($g./1,000\ m.^3$)
			Begin	End	Lat N.	Long. W.		
3	1	6/24	1130	1200	19°04'	155°59'	-	S[1/]
4	1	6/26	1107	1137	16°13'	151°46'	-	S
5	1	6/27	1104	1134	19°23'	151°36'	-	S
6	1	6/27	2118	2146	20°44'	151°33'	929.5	42.7
6	2	6/27	2113	2143	20°44'	151°33'	-	S
7	1	6/28	1109	1139	22°38'	151°33'	1660.4	S
8	1	6/29	0208	0240	23°22'	153°10'	-	25.7
8	2	6/29	0213	0245	23°22'	153°10'	-	S
9	1	6/29	2105	2137	22°20'	154°05'	956.1	70.0
9	2	6/29	2106	2137	22°20'	154°05'	-	S
10	1	6/30	1100	1130	20°15'	154°01'	-	S
11	1	7/1	1108	1138	16°40'	154°48'	-	S
12	1	7/1	2106	2136	16°14'	156°05'	1076.4	40.3
12	2	7/1	2107	2136	16°14'	156°05'	-	S
13	1	7/2	1105	1135	17°42'	157°17'	-	S
14	1	7/3	0215	0245	20°03'	147°45'	1598.5	28.2
14	2	7/3	0217	0247	20°03'	157°45'	-	S
17	1	7/8	1120	1150	18°46'	158°46'	-	S
18	1	7/8	2103	2131	17°32'	159°13'	884.0	87.6
18	2	7/8	2104	2134	17°32'	159°13'	-	S
19	1	7/9	1107	1137	16°01'	159°55'	-	S
20	1	7/10	0207	0236	16°00'	162°18'	1444.7	26.5
20	2	7/10	0208	0238	16°00'	162°18'	-	S
21	1	7/10	1100	1130	15°57'	163°37'	-	S
22	1	7/10	2106	2126	16°41'	164°32'	1213.9	52.8
22	2	7/10	2106	2136	16°41'	164°32'	-	S
23	1	7/11	1118	1148	18°43'	164°43'	-	S
26	1	7/12	0248	0318	20°55'	164°48'	-	S
27	1	7/12	1005	1035	22°07'	164°37'	-	S
28	1	7/12	2005	2035	23°25'	164°36'	-	S
30	1	7/14	1006	1036	23°52'	166°33'	-	S
31	1	7/15	0102	0130	23°53'	168°57'	1335.7	27.9
31	2	7/15	0104	0134	23°53'	168°57'	-	S
32	1	7/15	1000	1030	22°58'	169°21'	-	S
33	1	7/15	2000	2030	21°34'	169°28'	1176.9	34.4
33	2	7/15	2001	2031	21°34'	169°28'	-	S
34	1	7/16	1000	1030	19°42'	169°41'	-	S
35	1	7/17	0110	0140	17°45'	169°31'	1029.7	27.4
35	2	7/17	0112	0142	17°45'	169°31'	-	S
37	1	7/19	2005	2035	16°02'	169°17'	1102.5	28.3
37	2	7/19	2007	2037	16°02'	169°17'	-	S
38	1	7/20	1009	1039	16°02'	167°26'	-	S
39	1	7/21	0107	0137	17°46'	167°11'	1294.9	31.4
39	2	7/21	0108	0138	17°46'	167°11'	-	S
40	1	7/21	1006	1036	19°00'	167°08'	-	S
41	1	7/21	2000	2030	20°24'	167°06'	1228.6	31.6
41	2	7/21	2002	2032	20°24'	167°06'	-	S
42	1	7/22	1009	1039	22°29'	167°05'	-	S
43	1	7/23	0100	0130	23°42'	165°24'	2218.7	30.1
43	2	7/23	0101	0131	23°42'	165°24'	-	S

1/ Surface tow; sample weight not determined.

Table 9.--Zooplankton station positions and sample weights, Charles H. Gilbert cruise 53. Hauls were oblique, from 60 m. to the surface, except where indicated by S (surface tows) (con.)

Station	Sample	Date, 1961	Time (ZT)		Position		Water strained ($m.^3$)	Weight ($g./1{,}000\ m.^3$)
			Begin	End	Lat. N.	Long. W.		
44	1	7/23	1001	1031	23°59'	164°07'	-	S[1/]
45	1	7/23	2105	2135	24°04'	162°40'	1311.5	52.4
45	2	7/23	2106	2136	24°04'	162°40'	-	S
46	1	7/24	1103	1133	22°33'	162°04'	-	S
48	1	7/25	0206	0234	20°25'	162°15'	1280.7	30.7
48	2	7/25	0207	0237	20°25'	162°15'	-	S
49	1	7/25	1104	1134	19°02'	162°07'	-	S
50	1	7/25	2105	2135	17°30'	161°56'	1362.7	30.6
50	2	7/25	2106	2136	17°30'	161°56'	-	S
51	1	7/26	1058	1128	16°59'	160°20'	-	S
52	1	7/27	0208	0238	18°57'	159°59'	1516.8	29.3
52	2	7/27	0209	0239	18°57'	159°59'	-	S
53	1	7/27	1100	1130	20°16'	159°53'	-	S
54	1	7/27	2106	2136	21°50'	159°54'	1246.6	36.9
54	2	7/27	2105	2135	21°50'	159°54'	-	S
55	1	7/28	1102	1132	23°38'	159°44'	-	S
56	1	7/29	0205	0235	24°04'	157°43'	1217.2	66.9
56	2	7/29	0206	0236	24°04'	157°43'	-	S
57	1	7/29	1109	1139	23°40'	157°06'	-	S
58	1	7/29	2100	2130	22°38'	157°40'	935.6	117.4[2/]
58	2	7/29	2101	2131	22°38'	157°40'	-	S

N = 21
Total = 831.7
$\bar{x}$ = 39.6

1/ Surface tow; sample weight not determined.
2/ Large number of salps present in sample, value not included in averaging of zooplankton weights.

Table 10.--Record of surface fish school, bird flock, and aquatic mammal sightings, Charles H. Gilbert cruise 51

Date, 1961	Time (ZT)	Position		Bird flock sightings[1]	Surface fish schools			Aquatic mammals	
		Lat. N.	Long. W.		Species	Size of fish (lb.)	Size of school	Whales	Porpoise
1/18	1145	21°08'	157°47'	X (25)	ND[2]	-	-	-	-
	1325	20°54'	157°42'	X (250)	Skipjack	12	Large	-	-
	1455	20°42'	157°37'	X (150)	Skipjack	10	Large	-	-
	1200-1600[3]	20°33'	157°34'	-	-	-	-	2	-
1/19	0820	18°38'	155°55'	X (50)	ND	-	-	-	-
	0825	18°37'	155°55'	X (75)	ND	-	-	-	-
	0916	18°30'	155°49'	X (40)	ND	-	-	-	-
	1420	17°59'	155°22'	X (75)	ND	-	-	-	-
1/21	1455	18°08'	151°41'	-	Skipjack	10	Small	-	-
1/22	1200-1600	21°30'	151°30'	-	-	-	-	1	-
1/25	1300	20°13'	154°12'	-	Dolphin	5	Small	-	-
	0800-1200	20°21'	154°12'	-	-	-	-	-	50
1/27	1325	16°18'	156°55'	-	Skipjack	6	-	-	-
	1410	16°25'	156°58'	X (150)	ND	-	-	-	-
	1420	16°26'	156°59'	X (175)	ND	-	-	-	-
	1450	16°31'	157°00'	X (50)	ND	-	-	-	-
	1520	16°35'	157°02'	X (100)	ND	-	-	-	-
	1525	16°35'	157°02'	X (75)	ND	-	-	-	-
	0800-1200	16°08'	156°50'	-	-	-	-	-	1
1/28	0745	18°50'	157°29'	X (20)	ND	-	-	-	-
	0750	18°51'	157°29'	X (5)	ND	-	Small	-	-
	0805	18°53'	157°30'	X (40)	ND	-	-	-	-
	0830	18°57'	157°30'	X (15)	ND	-	-	-	-
	0855	19°01'	157°31'	X (20)	ND	-	-	-	-
	0920	19°04'	157°32'	X (15)	ND	-	-	-	-
	0950	19°09'	157°32'	X (10)	ND	-	-	-	-
	1020	19°15'	157°33'	X (150)	ND	-	-	-	-
	1025	19°16'	157°33'	X (25)	ND	-	-	-	-
	1240	19°33'	157°36'	-	Dolphin	-	-	-	-
	1255	19°35'	157°36'	X (25)	ND	-	-	-	-
	1350	19°44'	157°37'	X (15)	ND	-	-	-	-
	1410	19°47'	157°37'	X (15)	ND	-	-	-	-
	1450	19°53'	157°37'	X (20)	ND	-	-	-	-
	1525	19°58'	157°37'	X (15)	ND	-	-	-	-
	1540	20°01'	157°37'	X (15)	ND	-	-	-	-
	1625	20°07'	157°37'	X (11)	ND	-	-	-	-
	1700	20°14'	157°37'	X (13)	ND	-	-	-	-
	1720	20°17'	157°37'	X (75)	Skipjack	Medium	-	-	-
	1800	20°23'	157°36'	X (20)	ND	-	-	-	-
2/2	1725	16°41'	159°21'	X (40)	ND	-	-	-	-
2/3	1000	16°07'	161°10'	X (30)	ND	-	-	-	-
2/4	1750	19°27'	162°29'	X (60)	ND	-	-	-	-
2/5	0855	21°41'	162°27'	X (60)	ND	-	-	-	-
	1250	22°02'	162°13'	X (25)	ND	-	-	-	-
	1635	22°02'	161°40'	X (11)	ND	-	-	-	-
	1655	22°02'	161°37'	X (20)	ND	-	-	-	-
2/7	0755	22°08'	161°27'	X (60)	ND	-	-	-	-
	0912	22°09'	161°40'	X (12)	ND	-	-	-	-
	0915	22°09'	161°46'	X (18)	ND	-	-	-	-
	1130	22°15'	162°03'	X (30)	ND	-	-	-	-

1/ X = Bird flock; (N) = number of birds in flock.
2/ ND = Not determined.
3/ All designated observations were totaled for 4-hour periods. Stated positions are those at end of each period as designated.

Table 10.--Record of surface fish school, bird flock, and aquatic mammal sightings, Charles H. Gilbert cruise 51 (con.)

Date, 1961	Time (ZT)	Position		Bird flock sightings[1]	Surface fish schools			Aquatic mammals	
		Lat. N.	Long. W.		Species	Size of fish (lb.)	Size of school	Whales	Porpoise
2/7	1225	22°10'	162°10'	X (40)	ND[2]	-	-	-	-
	1230	22°10'	162°10'	X (30)	ND	-	-	-	-
	1250	22°12'	162°16'	X (25)	ND	-	-	-	-
	1355	22°12'	162°27'	X (15)	ND	-	-	-	-
	1400	22°12'	162°27'	X (10)	ND	-	-	-	-
	1410	22°13'	162°28'	X (30)	ND	-	-	-	-
	1442	22°18'	162°28'	X (13)	ND	-	-	-	-
	1535	22°28'	162°29'	X (25)	ND	-	-	-	-
	1545	22°29'	162°29'	X (65)	-	-	-	-	-
	1555	22°30'	162°29'	X (70)	-	-	-	-	-
	1625	22°31'	162°29'	X (100)	-	-	-	-	-
	1200-1600[3]	22°30'	162°28'	-	-	-	-	2	-
	1600-2000	23°06'	162°30'	-	-	-	-	1	-
2/8	0930	23°56'	163°34'	X (40)	ND	-	-	-	-
2/17	1200-1600	24°02'	168°11'	-	-	-	-	1	-
	1600-2000	24°02'	167°29'	-	-	-	-	10 Pilot whales	-
2/19	1200-1600	23°56'	166°02'	-	-	-	-	-	3
2/20	0400-0800	23°26'	164°34'	-	-	-	-	-	12
2/25	1045	20°08'	159°24'	-	ND	-	-	-	-
	1255	20°26'	159°25'	X (75)	Yellowfin	10	Large	-	-
	1340	20°29'	159°25'	X (100)	Skipjack	03	Large	-	-
	1414	20°38'	159°29'	X (15)	ND	-	-	-	-
2/27	0820	24°11'	157°58'	X (100)	Skipjack	-	-	-	-

1/ X = Bird flock; (N) = number of birds in flock.
2/ ND = Not determined.
3/ All designated observations were totaled for 4-hour periods. Stated positons are those at end of each period as designated.

Table 11.--Record of surface fish school, bird flock, and aquatic mammal sightings, Charles H. Gilbert cruise 52

Date, 1961	Time (ZT)	Position		Bird flock sightings[1/]	Surface fish schools			Aquatic mammals	
		Lat. N.	Long. W.		Species	Size of fish (lb.)	Size of school	Whales	Porpoise
4/4	1610	21°52'	158°42'	X (100)	ND[2/]	-	-	-	-
4/6	0800	22°02'	162°29'	X (200)	Skipjack	1	Large	-	-
	0955	22°02'	162°46'	X (15)	ND	-	-	-	-
	1330	22°03'	163°12'	X (60)	ND	-	-	-	-
	1535	22°01'	163°29'	X (150)	ND	-	Large	-	-
	0800-1200[3/]	22°02'	162°59'	-	-	-	-	1	-
	1200-1600	22°01'	163°34'	-	-	-	-	1	-
4/7	1130	22°09'	166°05'	X (30)	ND	-	-	-	-
4/9	0905	24°05'	166°48'	X (25)	Little tuna	-	Small	-	-
	1505	23°48'	167°08'	X (10)	-	-	-	-	-
	1550	23°41'	167°08'	X (50)	ND	-	-	-	-
	1730	23°23'	167°08'	X (30)	ND	-	-	-	-
	1200-1600	23°39'	167°08'	-	-	-	-	7	-
4/10	1020	22°09'	166°58'	X (100)	Skipjack - Bigeye	3 (skipjack)	Small	-	-
	1450	22°06'	167°08'	X (125)	Skipjack	2	Small	-	-
	1530	22°02'	167°11'	X (100)	Skipjack	1	Small	-	-
	1830	21°53'	167°31'	X (75)	Skipjack	2	Small	-	-
4/11	1320	19°28'	166°06'	X (50)	Skipjack	1	Small	-	-
4/12	0815	19°39'	168°16'	X (12)	ND	-	-	-	-
4/13	0930	16°48'	168°23'	X (10)	ND	-	Small	-	-
	1100	16°44'	168°33'	X (150)	Skipjack	3	Medium	-	-
	1445	16°42'	169°06'	X (100)	Skipjack	14	Small	-	-
	1600	16°39'	169°13'	X (40)	ND	-	-	-	-
	1610	16°38'	169°13'	X (150)	Skipjack	4	Medium	-	-
	1620	16°36'	169°11'	X (-)	ND	-	-	-	-
	1720	16°37'	169°16'	X (350)	ND	-	-	-	-
	1725	16°37'	169°16'	X (150)	ND	-	-	-	-
	1800	16°40'	169°22'	X (150)	ND	-	-	-	-
	1808	16°41'	169°24'	X (100)	ND	-	-	-	-
	1810	16°41'	169°24'	X (150)	ND	-	-	-	-
	1821	16°41'	169°26'	X (150)	ND	-	-	-	-
	1823	16°41'	169°26'	X (550)	ND	-	-	-	-
4/14	0730	16°42'	169°30'	X (40)	-	-	-	-	-
	0830	16°34'	169°30'	X (250)	Skipjack	1	-	-	-
	0850	16°29'	169°30'	-	ND	-	-	-	-
	0950	16°26'	169°29'	X (100)	Skipjack	3	Small	-	-
	1215	16°16'	169°30'	X (150)	ND	-	Small	-	-
	1415	16°18'	169°34'	X (150)	Skipjack	3	Small	-	-
	1200-1600	16°28'	169°33'	-	-	-	-	1	-
4/17	1430	16°37'	169°12'	X (25)	ND	-	-	-	-
	1452	16°37'	169°12'	X (200)	Skipjack	-	-	-	-
	1500	16°41'	169°21'	X (150)	ND	-	-	-	-
	1610	16°42'	169°29'	X (100)	ND	-	-	-	-
4/18	0810	16°36'	169°34'	X (100)	ND	-	-	-	-
	0911	16°31'	169°41'	X (30)	Skipjack	4	Small	-	-
	0945	16°27'	169°45'	X (200)	ND	-	-	-	-
	1033	16°32'	169°47'	X (125)	ND	-	-	-	-
	1055	16°34'	169°49'	X (75)	ND	-	-	-	-
	1515	16°40'	169°37'	X (50)	Skipjack	20	Small	-	-
	1600	16°43'	169°38'	X (100)	Skipjack	6	Small	-	-

1/ X = Bird flock; (N) = number of birds in flock.
2/ ND = Not determined.
3/ All designated observations were totaled for 4-hour periods. Stated positions are those at end of each period as designated.

Table 11.--Record of surface fish school, bird flock, and aquatic mammal sightings, Charles H. Gilbert cruise 52 (con.)

Date, 1961	Time (ZT)	Position		Bird flock sightings[1]	Surface fish schools			Aquatic mammals	
		Lat. N.	Long. W.		Species	Size of fish (lb.)	Size of school	Whales	Porpoise
4/19	1617	16°58'	169°27'	X (250)	ND[2]	-	-	-	-
	1650	17°03'	169°26'	X (200)	ND	-	-	-	-
	1715	17°04'	169°25'	X (150)	ND	-	-	-	-
4/20	0815	19°10'	168°32'	X (100)	ND	-	-	-	-
	1150	19°45'	168°17'	X (11)	ND	-	-	-	-
	1625	20°26'	167°56'	X (12)	ND	-	-	-	-
	1200-1600[3]	20°27'	167°58'	-	-	-	-	-	6
4/21	1155	23°05'	166°39'	X (25)	ND	-	-	-	-
	1250	23°11'	166°35'	X (11)	ND	-	-	-	-
	1255	23°13'	166°35'	X (50)	ND	-	-	-	-
	1444	23°25'	166°30'	X (30)	ND	-	-	-	-
	1448	23°26'	166°29'	X (25)	ND	-	-	-	-
4/26	Poor scouting conditions - rough seas.								
4/27	0925	21°41'	167°15'	X (15)	ND	-	-	-	-
	1200-1600	21°17'	166°30'	-	-	-	-	4 Sperm	-
4/28	1235	20°04'	164°48'	X (25)	Skipjack	8	Small	-	-
4/30	1015	19°33'	160°26'	-	ND	1	Small	-	-
	1410	19°19'	159°58'	X (23)	Skipjack	2	Small	-	-
5/1	0755	18°30'	158°50'	X (100)	ND	-	-	-	-
	0850	18°30'	158°45'	X (75)	ND	-	-	-	-
	1110	18°27'	158°32'	X (100)	Yellowfin	10	-	-	-
	1220	18°24'	158°28'	X (12)	Dolphin	15	Small	-	-
	1724	18°33'	158°22'	X (300)	Skipjack	5	Large	-	-
	1730	18°33'	158°22'	X (300)	Skipjack	5	Large	-	-
5/2	0755	20°45'	158°03'	X (30)	ND	-	-	-	-
	0850	20°50'	158°01'	X (150)	Skipjack	2	Large	-	-
	0945	20°55'	157°58'	X (25)	ND	-	-	-	-
	1000	21°04'	157°55'	X (50)	ND	-	-	-	-
5/4	1530	21°11'	157°49'	X (20)	ND	-	-	-	-
	1601	21°07'	157°48'	X (400)	ND	-	-	-	-
	1608	21°06'	157°47'	X (200)	ND	-	-	-	-
	1611	21°06'	157°47'	X (75)	ND	-	-	-	-
	1611	21°06'	157°47'	X (200)	ND	-	-	-	-
	1621	21°05'	157°47'	X (150)	ND	-	-	-	-
	1626	21°04'	157°47'	X (125)	ND	-	-	-	-
	1635	21°03'	157°46'	X (100)	Skipjack	-	-	-	-
	1645	21°01'	157°46'	X (60)	ND	-	-	-	-
	1735	20°55'	157°44'	X (100)	ND	-	-	-	-
	1801	20°51'	157°43'	X (25)	ND	-	-	-	-
	1815	20°47'	157°42'	X (100)	ND	-	-	-	-
5/5	0922	18°49'	157°45'	X (250)	Yellowfin	-	-	-	-
	1030	18°56'	157°53'	X (100)	ND	-	-	-	-
	1610	18°42'	158°34'	X (15)	ND	-	-	-	-
5/7	0940	19°39'	156°05'	X (40)	Yellowfin	-	Small	-	-
	1018	19°47'	156°06'	X (75)	Skipjack	6	Small	-	-
	0400-0800	19°35'	156°10'	-	-	-	-	-	50
5/8	0735	20°09'	155°57'	X (12)	ND	-	Small	-	-

1/ X = Bird flock; (N) = number of birds in flock.

2/ ND = Not determined.

3/ All designated observations were totaled for 4-hour periods. Stated positions are those at end of each period as designated.

Table 12.--Record of surface fish school, bird flock, and aquatic mammal sightings, Charles H. Gilbert cruise 53

Date, 1961	Time (ZT)	Position		Bird flock sightings[1/]	Surface fish schools			Aquatic mammals	
		Lat. N.	Long. W.		Species	Size of fish (lb.)	Size of school	Whales	Porpoise
6/23	1340	21°09'	157°42'	X (50)	ND	-	-	-	-
	1430	21°07'	157°40'	X (200)	ND	-	-	-	-
	1835	20°51'	157°13'	X (150)	ND	-	-	-	-
6/30	0630	21°03'	154°02'	X (50)	Skipjack	4	Small	-	-
	1004	20°26'	154°01'	X (35)	ND	-	Small	-	-
	1015	20°24'	154°01'	X (29)	ND	-	-	-	-
	1045	20°19'	154°01'	X (13)	ND	-	Medium	-	-
	1100	20°16'	154°01'	X (60)	ND	-	-	-	-
	1340	19°52'	154°00'	X (50)	Dolphin	-	Medium	-	-
	1420	19°35'	154°00'	X (50)	ND	-	Small	-	-
	1515	19°26'	154°00'	X (75)	ND	-	Large	-	-
	1522	19°26'	154°00'	X (50)	ND	-	Medium	-	-
	1630	19°22'	154°00'	X (50)	ND	-	Medium	-	-
	1712	19°13'	154°00'	X (50)	Skipjack - Dolphin	20 (Skipjack)	Medium	-	-
7/3	0610	20°36'	157°50'	X (50)	ND	-	-	-	-
	0725	20°52'	157°53'	X (100)	ND	-	-	-	-
	0801	20°55'	157°54'	X (15)	ND	-	-	-	-
7/10	1330	15°59'	164°00'	X (18)	ND	-	-	-	-
7/11	1604	19°23'	164°46'	X (200)	Skipjack	6	Medium	-	-
7/12	0800	21°49'	164°40'	X (100)	ND	-	-	-	-
	1747	23°06'	164°37'	X (100)	ND	-	-	-	-
	1830	23°17'	164°36'	X (100)	ND	-	-	-	-
7/13	0945	23°55'	166°10'	X (200)	ND	-	-	-	-
7/14	0930	23°52'	166°29'	X (75)	ND	-	-	-	-
	1415	23°53'	167°10'	X (50)	ND	-	-	-	-
7/22	0815	22°11'	167°08'	X (50)	ND	-	-	-	-
	0830	22°13'	167°08'	X (100)	ND	-	-	-	-
	1045	22°35'	167°05'	X (50)	ND	-	-	-	-
7/23	1050	24°00'	163°56'	X (75)	ND	-	-	-	-
7/24	1305	22°21'	162°07'	X (100)	Skipjack	15	Small	-	-
7/26	0800	17°00'	160°45'	X (50)	ND	-	-	-	-
	1845	17°45'	160°00'	X (100)	ND	-	-	-	-
7/27	0755	19°49'	159°56'	X (15)	Skipjack	15	Small	-	-
	0830	19°54'	159°56'	X (60)	ND	-	-	-	-
	1625	21°06'	159°54'	X (50)	ND	-	-	-	-

1/ X = Bird flock; (N) = number of birds in flock.
2/ ND = Not determined.

Table 13.--Record of surface trolling catch data for three survey cruises in Hawaiian waters in 1961

Cruise	Date, 1961	Time (ZT)	Position		Catch	
			Lat. N.	Long. W.	Species	Number
Charles H. Gilbert 51	1/21	1410	18°01'	151°41'	Dolphin	1
		1450	18°08'	151°41'	Skipjack	1
	1/25	1300	20°12'	154°11'	Dolphin	2
	1/27	1800	16°06'	154°12'	"	1
	2/1	1300	20°34'	158°07'	"	1
	2/2	1450	17°03'	159°16'	"	2
		1600	16°53'	159°18'	"	1
		1645	16°48'	159°20'	"	15
					Yellowfin	1
	2/16	1815	22°22'	169°28' [1/]	Dolphin	2
	2/19	1300	24°01'	168°41' [1/]	Yellowfin	3
					Wahoo	1
	2/24	0550	16°07'	159°47'	Dolphin	1
	2/25	1315	20°28'	159°25'	Yellowfin	2
		1500	20°40'	159°26'	Dolphin	1
Charles H. Gilbert 52	4/4	1215	21°32'	158°16'	"	2
	4/5	1145	22°08'	159°51'	Yellowfin	1
	4/6	1045	22°02'	162°45'	Dolphin	1
		1535	22°01'	163°29'	"	1
	4/7	0915	21°59'	166°02'	"	1
	4/9	0710	23°50'	166°24'	Yellowfin	1
		1018	24°11'	166°52'	Little tuna	2
		1120	24°16'	167°02'	"	1
		1125	24°17'	167°03'	"	2
		1235	24°12'	167°07'	Dolphin	1
	4/13	1840	16°41'	169°28'	Yellowfin	2
	4/14	1355	16°18'	169°34'	Dolphin	1
	4/17	0735	16°43'	169°28'	Yellowfin	1
		0745	16°43'	169°25'	"	2
		0800	16°44'	169°05'	"	1
		1700	16°42'	169°30'	Dolphin	1
					Wahoo	1
		1730	16°43'	169°31'	Yellowfin	1
					Jack	1
	4/18	0730	16°36'	169°36'	Yellowfin	2
		0740	16°35'	169°38'	"	1
	4/19	1348	16°53'	169°29'	Jack	1
		1640	16°59'	169°26'	Dolphin	1
		1650	17°00'	169°25'	"	1
	4/20	1640	20°28'	167°56'	"	1
	4/21	1350	23°18'	166°32'	"	1
		1545	23°33'	166°25'	"	2
		1550	23°34'	166°30'	"	2
		1700	23°43'	166°21'	Little tuna	2
	4/26	0835	23°44'	166°17'	"	2
		0900	23°45'	166°16'	"	1
		1030	23°32'	166°24'	Dolphin	1
	4/29	1500	19°32'	162°23'	Wahoo	1
	4/30	0730	19°40'	160°47'	Barracuda	1
	5/1	0720	18°34'	158°56'	Dolphin	1
		1230	18°25'	158°28' [1/]	"	1
	5/5	0600	19°13'	157°17' [1/]	Yellowfin	1
	5/13	1330	20°58'	157°22'	Dolphin	1
		1400	21°00'	157°27'	Yellowfin	2

1/ Position at setting of trolling lines; no other data available.

Table 13.--Record of surface trolling catch data for three survey cruises in Hawaiian waters in 1961 (con.)

Cruise	Date, 1961	Time (ZT)	Position		Catch	
			Lat. N.	Long. W.	Species	Number
Charles H. Gilbert 53	6/23	1410	21°15'	157°52'	Dolphin	1
		1423	21°13'	157°49'	"	1
	6/29	1255	23°30'	154°04'	"	1
	7/1	1520	16°12'	155°06'	"	1
	7/12	1858	23°24'	164°34'	Little tuna	2
	7/17	0930	16°46'	169°34'	Wahoo	1
	7/21	1600	19°48'	167°05'	Dolphin	1
	7/29	0630	24°03'	157°10'	"	2

Table 14.--Common and scientific names of fishes reported in tables 10-13

Common name	Scientific name
Dolphin	Coryphanena hippurus Linnaeus
Skipjack tuna	Katsuwonus pelamis (Linnaeus)
Yellowfin tuna	Neothunnus macropterus (Temminck and Schlegel)
Bigeye tuna	Parathunnus sibi (Temminck and Schlegel)
Little tuna	Euthynnus yaito Kishinouye
Bonito	Sarda orientalis (Cuvier and Valenciennes)
Wahoo	Acanthocybium solandri (Cuvier and Valenciennes)
Barracuda	Sphyraena nigripinnis Temminck and Schlegel
Jack	Caranx sp.

Table 15.--Record of skipjack tagging

Cruise	Date, 1961	Position		Number tagged	Average size (lbs.)
		Lat. N.	Long. W.		
Charles H. Gilbert 51	4/13	16°44'	168°33'	72	2-3
		16°42'	169°06'	24	12-14
		16°38'	169°12'	11	4
	4/14	16°26'	169°29'	13	2-3
		16°18'	169°34'	67	2-3
	4/18	16°43'	169°38'	54	5